



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

JUN 20 2002

Jerry Yelverton, Chief Executive Officer  
Entergy Services, Inc.  
P.O. Box 31995  
Jackson, Mississippi 39286-1995

SUBJECT: NRC/ENTERGY OPERATIONS, INC. MANAGEMENT MEETING

Dear Mr. Yelverton:

This refers to our meeting conducted at your Echelon One Auditorium in Jackson, Mississippi, on June 6, 2002. At this meeting, NRC and Entergy management discussed the performance of Arkansas Nuclear One, Grand Gulf Nuclear Station, Riverbend Station and the Waterford Steam Electric Station. Recent Entergy organizational changes and current regulatory issues were also discussed, as indicated in the attached slide presentations.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Ken E. Brockman, Director  
Division of Reactor Projects

Dockets:  
ANO: 50-313; 50-368  
GG: 50-416  
RBS: 50-458  
WAT: 50-382

Licenses:  
ANO: DPR-51; NPF-6  
GG: NPF-29  
RBS: NPF-47  
WAT: NPF-38

Entergy Operations, Inc.

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Enclosures:

1. Attendance List
2. Presentation Slides

cc:

Craig G. Anderson, Vice President,  
Operations  
Arkansas Nuclear One  
Entergy Operations, Inc.  
1448 S.R. 333  
Russellville, Arkansas 72801-0967

William A. Eaton, Vice President  
Operations - Grand Gulf Nuclear Station  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, Mississippi 39150

Paul D. Hinnenkamp, Vice President - Operations  
River Bend Station  
Entergy Operations, Inc.  
P.O. Box 220  
St. Francisville, Louisiana 70775

Joseph E. Venable  
Vice President Operations  
Waterford 3  
Entergy Operations, Inc.  
17265 River Road  
Killona, Louisiana 70066-0751

Executive Vice President  
& Chief Operating Officer  
Entergy Operations, Inc.  
P.O. Box 31995  
Jackson, Mississippi 39286-1995

Vice President  
Operations Support  
Entergy Operations, Inc.  
P.O. Box 31995  
Jackson, Mississippi 39286-1995

Manager, Washington Nuclear Operations  
ABB Combustion Engineering Nuclear  
Power  
12300 Twinbrook Parkway, Suite 330  
Rockville, Maryland 20852

Entergy Operations, Inc.

-3-

County Judge of Pope County  
Pope County Courthouse  
100 West Main Street  
Russellville, Arkansas 72801

Winston & Strawn  
1400 L Street, N.W.  
Washington, DC 20005-3502

Bernard Bevill  
Radiation Control Team Leader  
Division of Radiation Control and  
Emergency Management  
Arkansas Department of Health  
4815 West Markham Street, Mail Slot 30  
Little Rock, Arkansas 72205-3867

Mike Schoppman  
Framatome ANP, Inc.  
Suite 705  
1911 North Fort Myer Drive  
Rosslyn, Virginia 22209

Wise, Carter, Child & Caraway  
P.O. Box 651  
Jackson, Mississippi 39205

Sam Mabry, Director  
Division of Solid Waste Management  
Mississippi Department of Natural  
Resources  
P.O. Box 10385  
Jackson, Mississippi 39209

President, District 1  
Claiborne County Board of Supervisors  
P.O. Box 339  
Port Gibson, Mississippi 39150

General Manager  
Grand Gulf Nuclear Station  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, Mississippi 39150

Entergy Operations, Inc.

-4-

The Honorable Richard Ieyoub  
Attorney General  
Department of Justice  
State of Louisiana  
P.O. Box 94005  
Baton Rouge, Louisiana 70804-9005

Office of the Governor  
State of Mississippi  
Jackson, Mississippi 39201

Mike Moore, Attorney General  
Frank Spencer, Asst. Attorney General  
State of Mississippi  
P.O. Box 22947  
Jackson, Mississippi 39225

Dr. F. E. Thompson, Jr.  
State Health Officer  
State Board of Health  
P.O. Box 1700  
Jackson, Mississippi 39215

Robert W. Goff, Program Director  
Division of Radiological Health  
Mississippi Dept. of Health  
P.O. Box 1700  
Jackson, Mississippi 39215-1700

Director, Nuclear Safety  
and Regulatory Affairs  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, Mississippi 39150

General Manager  
Plant Operations  
River Bend Station  
Entergy Operations, Inc.  
P.O. Box 220  
St. Francisville, Louisiana 70775

Director - Nuclear Safety  
River Bend Station  
Entergy Operations, Inc.  
P.O. Box 220  
St. Francisville, Louisiana 70775

Entergy Operations, Inc.

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Mark J. Wetterhahn, Esq.  
Winston & Strawn  
1401 L Street, N.W.  
Washington, DC 20005-3502

Manager - Licensing  
River Bend Station  
Entergy Operations, Inc.  
P.O. Box 220  
St. Francisville, Louisiana 70775

H. Anne Plettinger  
3456 Villa Rose Drive  
Baton Rouge, Louisiana 70806

President  
West Feliciana Parish Police Jury  
P.O. Box 1921  
St. Francisville, Louisiana 70775

Michael E. Henry, State Liaison Officer  
Department of Environmental Quality  
P.O. Box 82135  
Baton Rouge, Louisiana 70884-2135

Brian Almon  
Public Utility Commission  
William B. Travis Building  
P.O. Box 13326  
1701 North Congress Avenue  
Austin, Texas 78701-3326

General Manager, Plant Operations  
Waterford 3 SES  
Entergy Operations, Inc.  
17265 River Road  
Killona, Louisiana 70066-0751

Manager - Licensing Manager  
Waterford 3 SES  
Entergy Operations, Inc.  
17265 River Road  
Killona, Louisiana 70066-0751

Chairman  
Louisiana Public Service Commission  
P.O. Box 91154  
Baton Rouge, Louisiana 70821-9154

Entergy Operations, Inc.

-6-

Director, Nuclear Safety &  
Regulatory Affairs  
Waterford 3 SES  
Entergy Operations, Inc.  
17265 River Road  
Killona, Louisiana 70066-0751

Michael E. Henry, Administrator  
and State Liaison Officer  
Department of Environmental Quality  
P.O. Box 82135  
Baton Rouge, Louisiana 70884-2135

Parish President  
St. Charles Parish  
P.O. Box 302  
Hahnville, Louisiana 70057

ENCLOSURE 1  
ATTENDANCE LIST

NRC/EOI  
SENIOR MANAGEMENT MEETING

June 6, 2002  
7:00 a.m. - 2:30 p.m.  
Echelon One Auditorium; Jackson, MS

ATTENDANCE LIST

Entergy Operations, Inc.

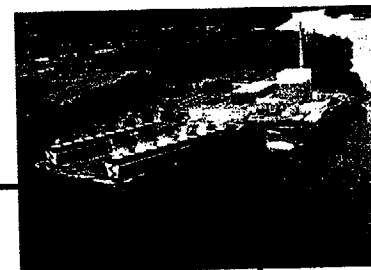
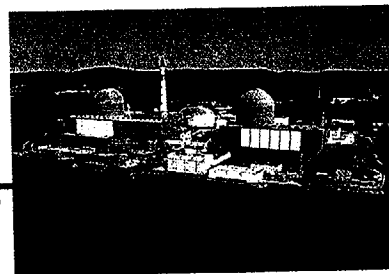
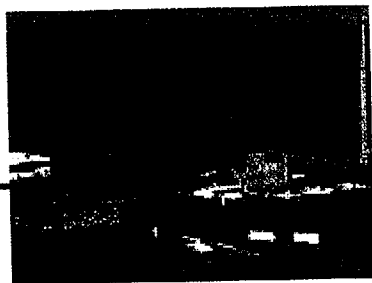
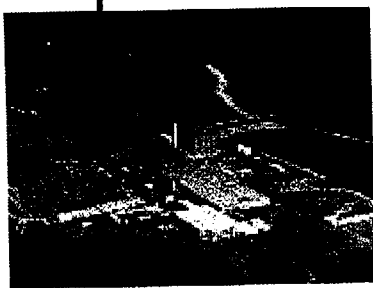
Jerry Yelverton, CEO, EOI  
John McGaha, President, EOI  
Gary Taylor, VP/COO, EOI  
Bill Eaton, VP, Operations, GGNS  
Paul Hinnenkamp, VP, Operations, RBS  
Craig Anderson, VP, Operations, ANO  
Joe Venable, VP, Operations, W3  
George Williams, VP, Operations Support  
Bill Campbell, VP, Engineering  
Joe Blount, General Attorney - Generation  
Brad Edwards, General Manager, GGNS  
Dwight Mims, General Manager, RBS  
Bob Bement, General Manager, ANO  
Greg Pierce, Director, Oversight  
Mike Krupa, Director, NS&L  
Jerry Roberts, Director, NSA, GGNS  
Rick King, Director, NSA, RBS  
Sherrie Cotton, Director, NSA, ANO  
Ken Peters, Director, NSA, W3  
Joe Leavines, Manager, Licensing, RBS  
Glenn Ashley, Manager Licensing, ANO  
Mike Brandon, Manager Licensing, W3

U.S. Nuclear Regulatory Commission

Ellis Merschoff, Regional Administrator, Region IV  
Ken Brockman, Director, Division of Reactor Projects (DRP), Region IV  
William Johnson, Chief, DRP/A, GGNS  
David Graves, Chief, DRP/B, RBS  
Linda Smith, Chief, DRP/D, ANO  
William Jones, Chief, DRP/E, W3  
Kathy Weaver, Resident Inspector, ANO  
Tim Hoeg, Senior Resident Inspector, GGNS  
Peter Alter, Senior Resident Inspector, RBS  
Tom Farnholtz, Senior Resident Inspector, W-3  
Bill Ruland, Project Directorate, NRR  
Tom Alexion, Project Manager, NRR  
Ledyard B. Marsch, Deputy Director of Division of License Project Management, NRR



ENCLOSURE 2  
PRESENTATION SLIDES




# EOI/NRC Senior Management Meeting



June 6, 2002

## Morning Session

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7:00	Early Morning Coffee	
7:20	<b>Welcome &amp; Introductions</b>	<b>Jerry Yelverton</b>
7:25	Recent Organization Changes	John McGaha
7:35	Regional Perspectives	Ellis Merschoff
8:20	2001 Review of Plant Performance	Gary Taylor
9:05	NRR Perspectives	Tad Marsh
9:50	Break	
10:00	Waterford 3 Performance	Joe Venable Tom Farnholtz, et. al.
10:40	River Bend Performance	Paul Hinnenkamp Peter Alter, et. al.
11:20	Grand Gulf Performance	Bill Eaton Tim Hoeg, et. al.
12:00	ANO Performance	Craig Anderson Kathy Weaver, et. al. 

## Afternoon Session

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12:40	Lunch	
1:15	Engineering Issues	Bill Campbell
1:45	Operations Support	George Williams
2:15	Closing Remarks	Entergy/NRC
2:30	Adjourn	



## Welcome and Introductions

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Jerry Yelverton  
Chief Executive Officer



## Goals for Today's Meeting

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- ▶ Open Dialogue
- ▶ Discuss our priorities, initiatives and results
- ▶ Understand each others points of view



## Morning Session

---

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## Recent Organization Changes

John McGaha  
President - EOI



Notes

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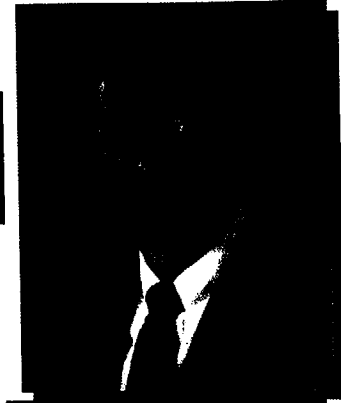
Notes

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**Chairman & CEO  
President, ENI  
Jerry Yelverton**



**ENI Sr. VP & COO  
Mike Kansler**



**President, EOI  
John McGaha**



**Sr. VP & COO  
Gary Taylor**



**Engineering VP  
Bill Campbell**

**Ops Support VP  
George Williams**



**Sr. VP, Bus. Dev.  
Randy Hutchinson**

**Grand Gulf VP  
Bill Eaton**



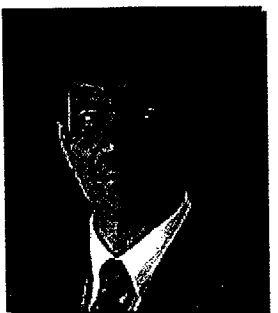
**ANO VP  
Craig Anderson**



**River Bend VP  
Paul Hinnenkamp**



**Waterford 3 VP  
Joe Venable**



## Organization Changes

as of May 2002

- ▶ Vice President, Operations Support - George Williams
  - Jay Thayer (Rotational Assignment)
  - Joe Venable
  - Paul Hinnenkamp
- ▶ Vice President - RBS - Paul Hinnenkamp
- ▶ Vice President - W3 - Joe Venable
- ▶ General Manager - GGNS - Brad Edwards
- ▶ General Manager - W3 - Randy Douet



## Other Organization Changes

- ▶ Director, Major Projects - Rick Lane
- ▶ Director, Engineering - ANO - Joe Kowalewski
- ▶ Director, Engineering - W3 - Craig Lambert
- ▶ Director, Engineering - GGNS - Dennis Wiles
- ▶ Director, Nuclear Safety Assurance - ANO - Sherrie Cotton
- ▶ Director, Nuclear Safety Assurance - W3 - Ken Peters\*
- ▶ Director, Materials Purchasing & Contracts - Tracey Stubbs

\* From IP3





## Other Organization Changes

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▶ > 40 Changes to Manager and Above  
Since Our Last Meeting

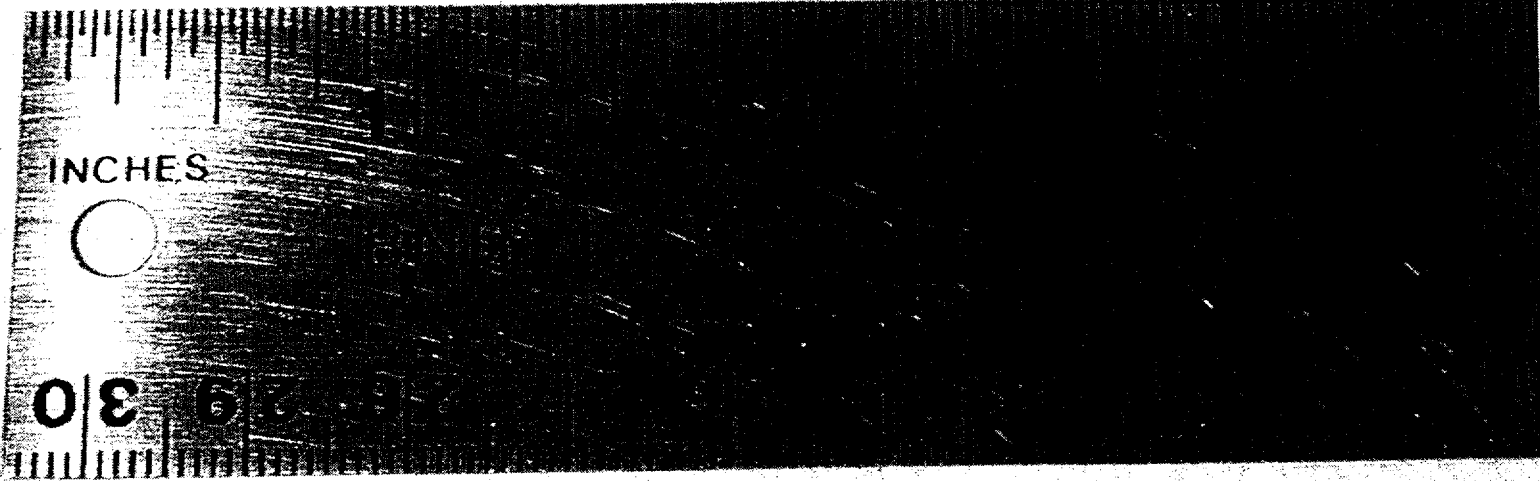
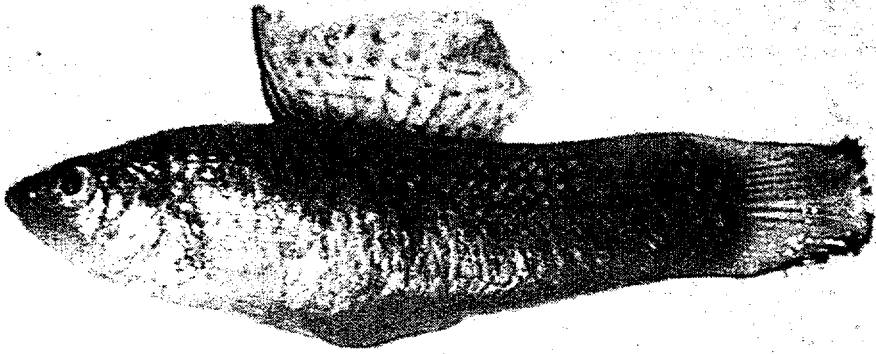


## Morning Session

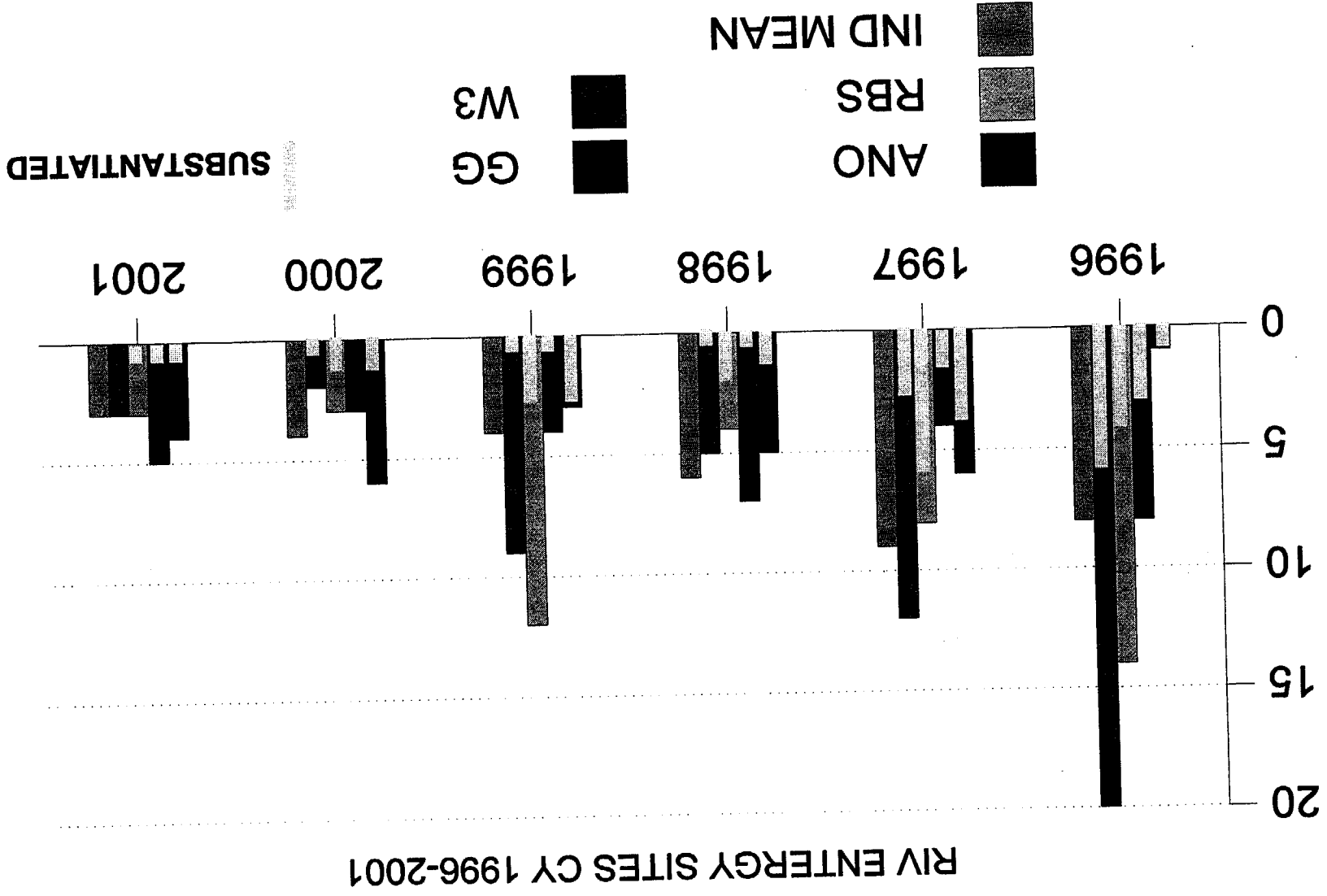
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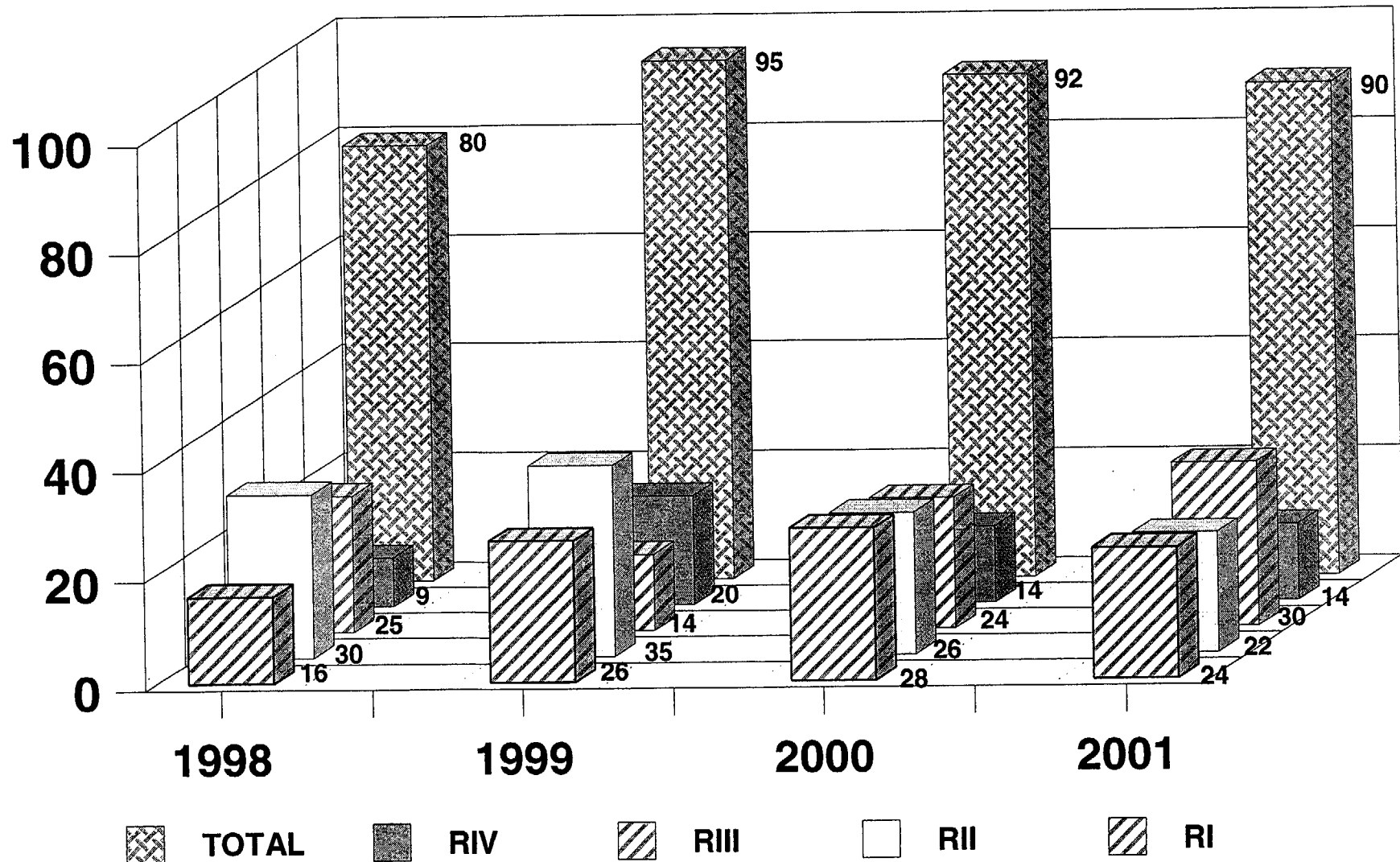




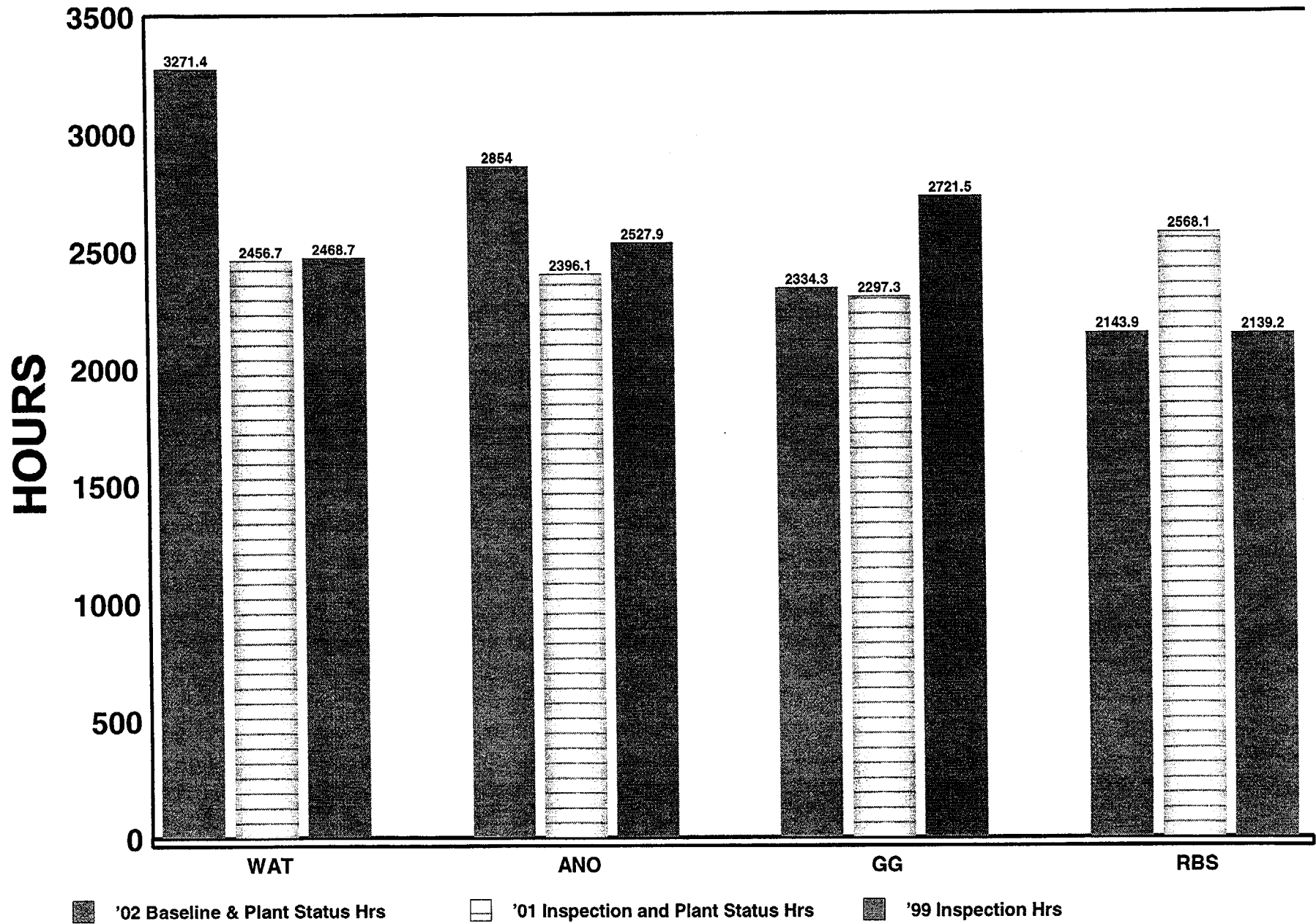
## RIV Historical Alerts Information

SITE	DATE	SUBJECT
Waterford	03/19/94	Release of toxic chemical from chemical gas. Event 26965
Waterford	03/25/95	Chemical release at nearby plant. Event 28588
Waterford	07/20/95	Ammonia release at nearby chemical plant. Event 29088
Palo Verde	04/04/96	Fire in lighting panel in the control room. Event 30236
Waterford	01/18/97	Toxic chemical spill 10 miles from site. Event 31619
Waterford	03/20/97	Release of toxic gas from nearby chemical plant. Event 31979
San Onofre	03/05/99	Bomb threat Event 35443
Fort Calhoun	10/26/99	Loss of vital electrical buses and loss of SDC. Event 36347
Waterford	11/27/99	Sudden depress of RCS or RWST of 3000 gallons of primary water. Event 36469
Cooper	06/25/01	Small fire in startup transformer. Event 38091
Waterford	07/16/01	Toxic gas release near site. Event 38142
Waterford	03/23/02	When placing SDC in service the SI injection valves did not open. Event 38796

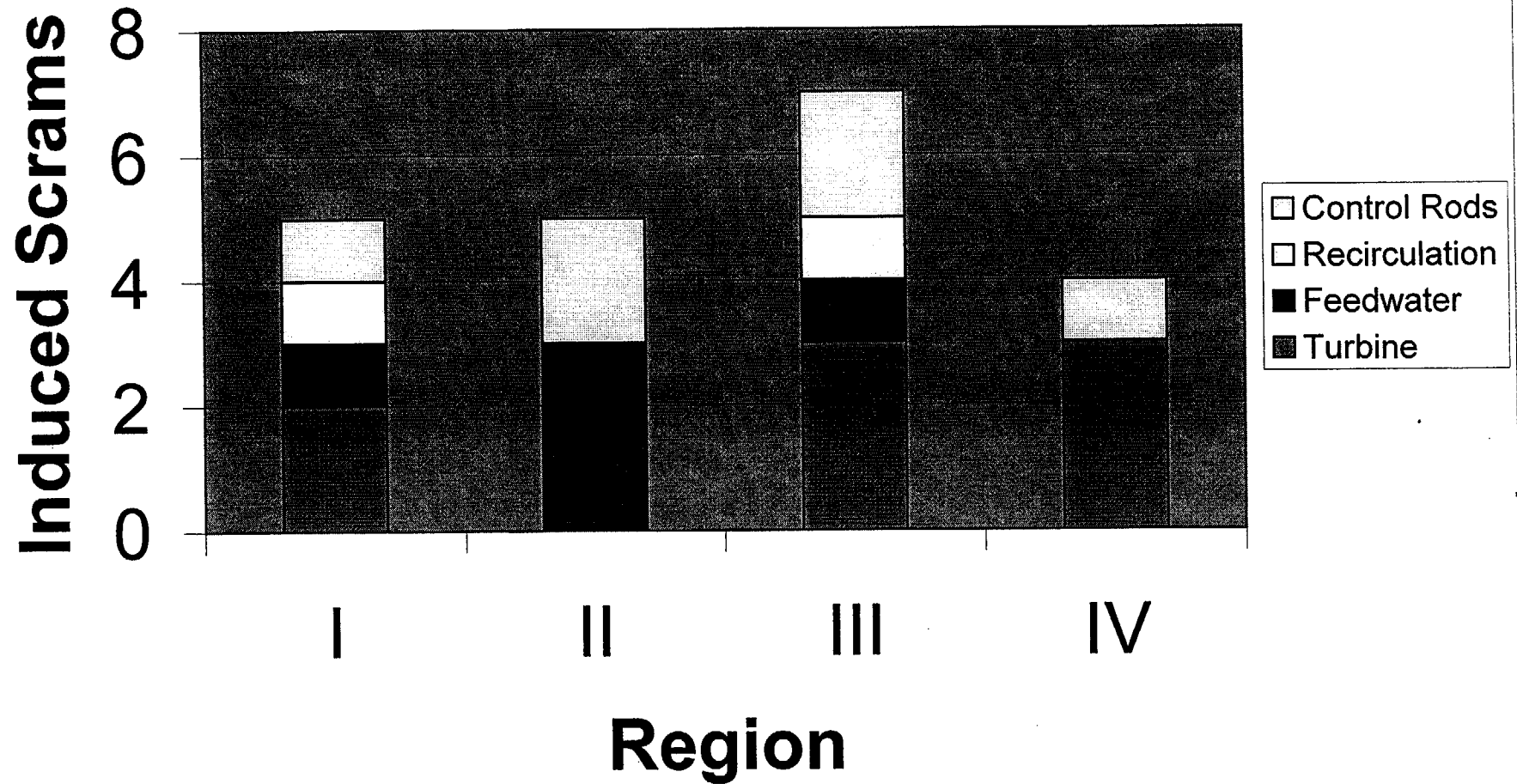
# Total Number of Scrams



# ENTERGY OLD PROGRAM/NEW PROGRAM COMPARISON 1999 - 2002



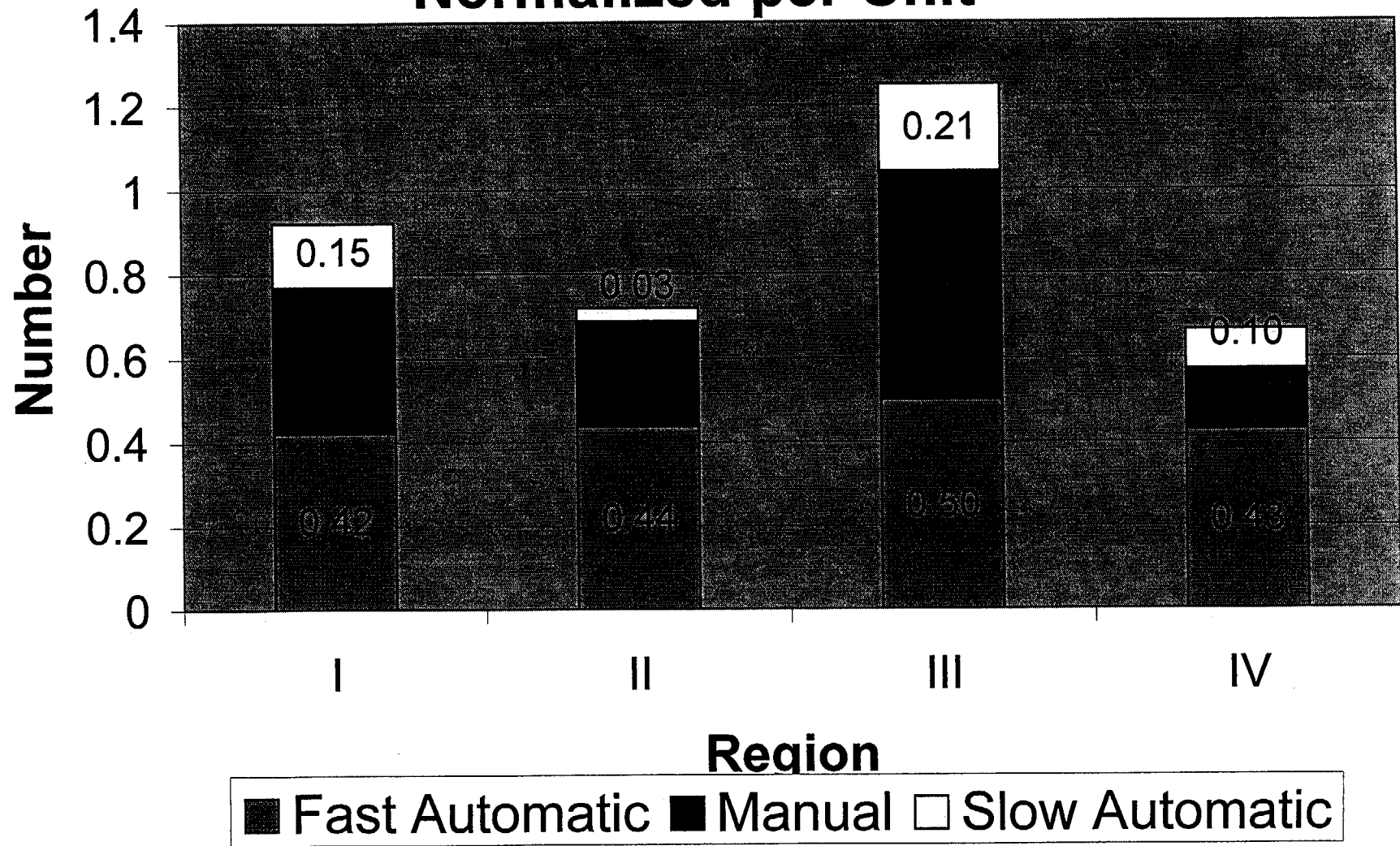
# 2001 Control System Failures



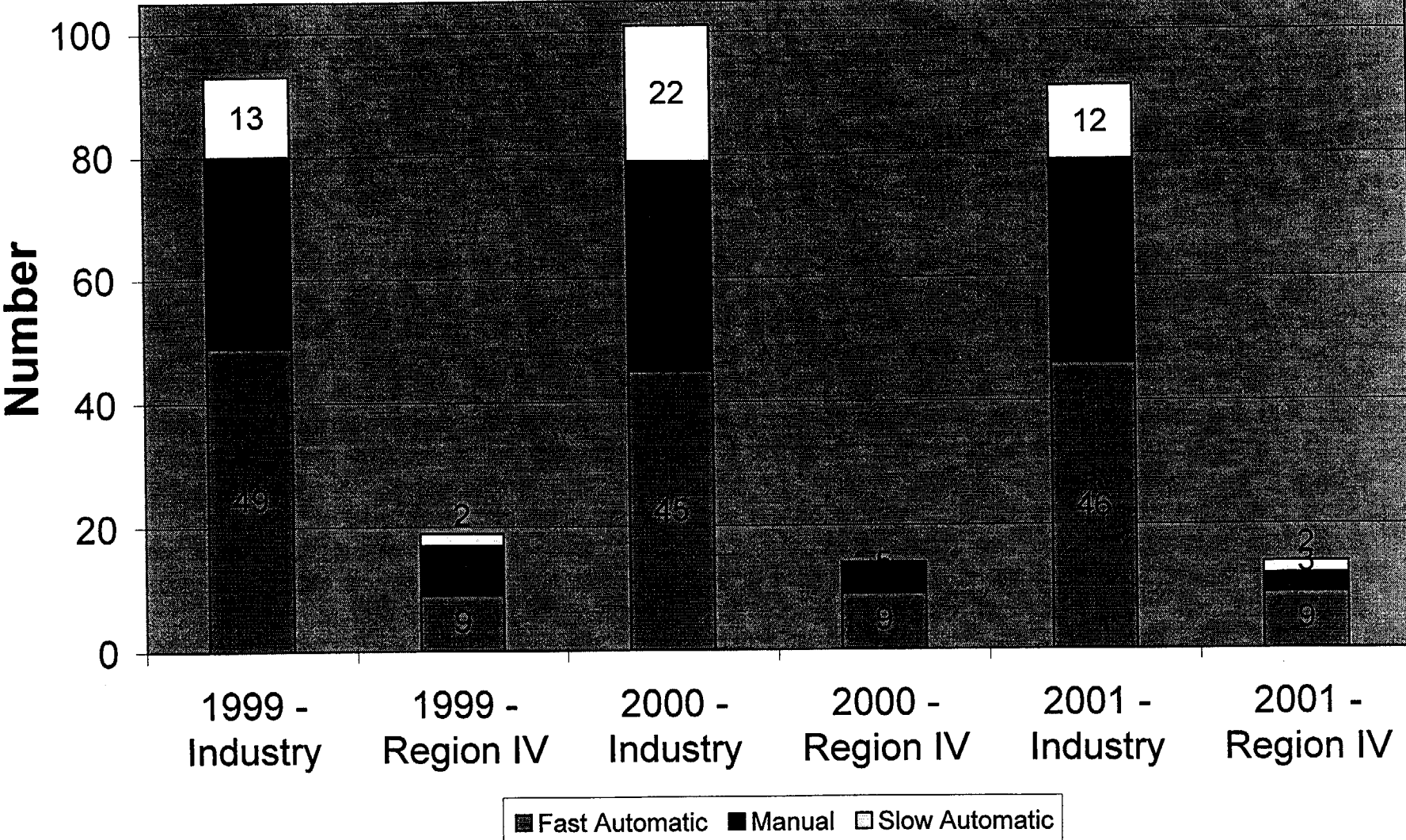


# 2001 SCRAMS

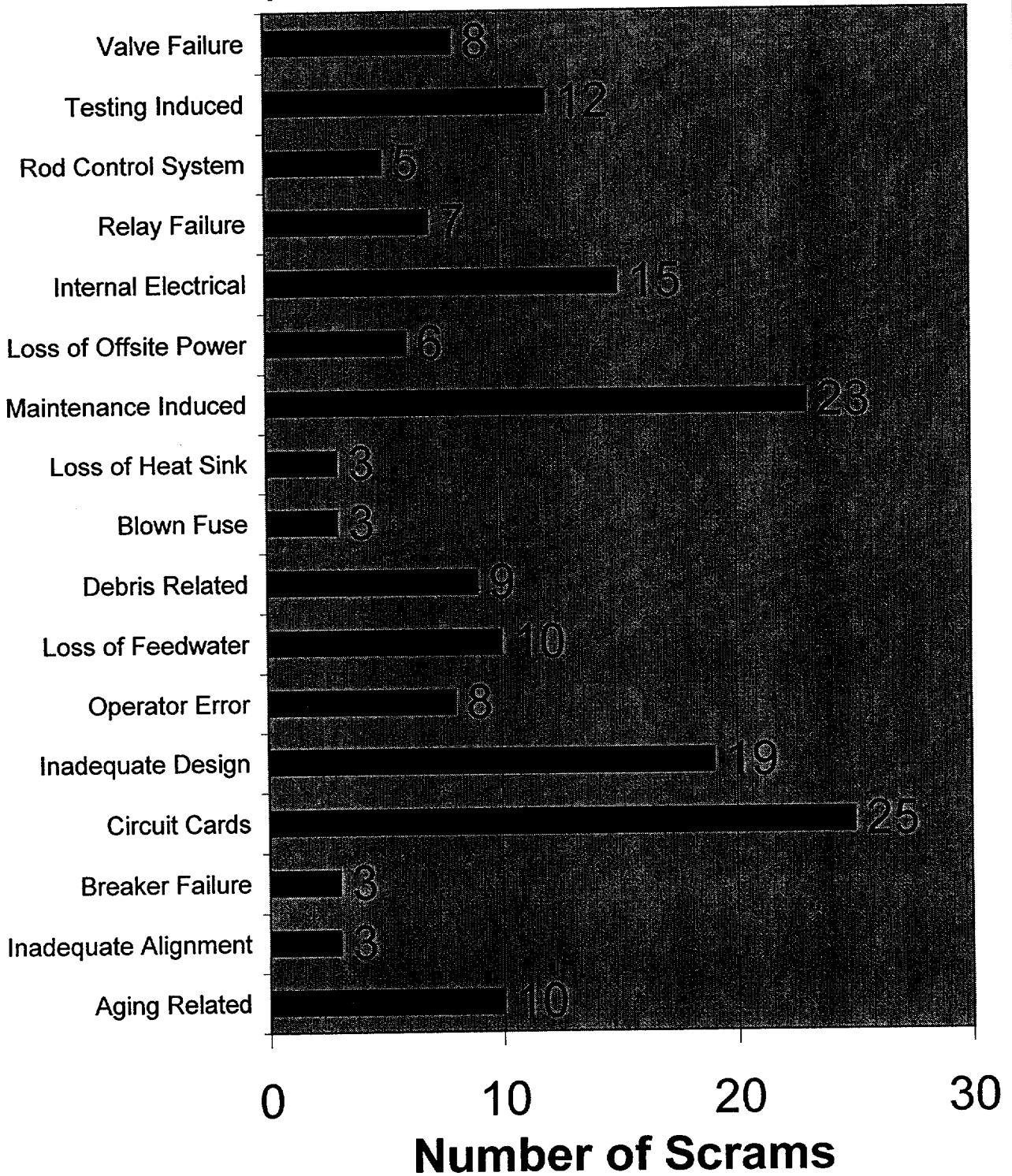
## Normalized per Unit



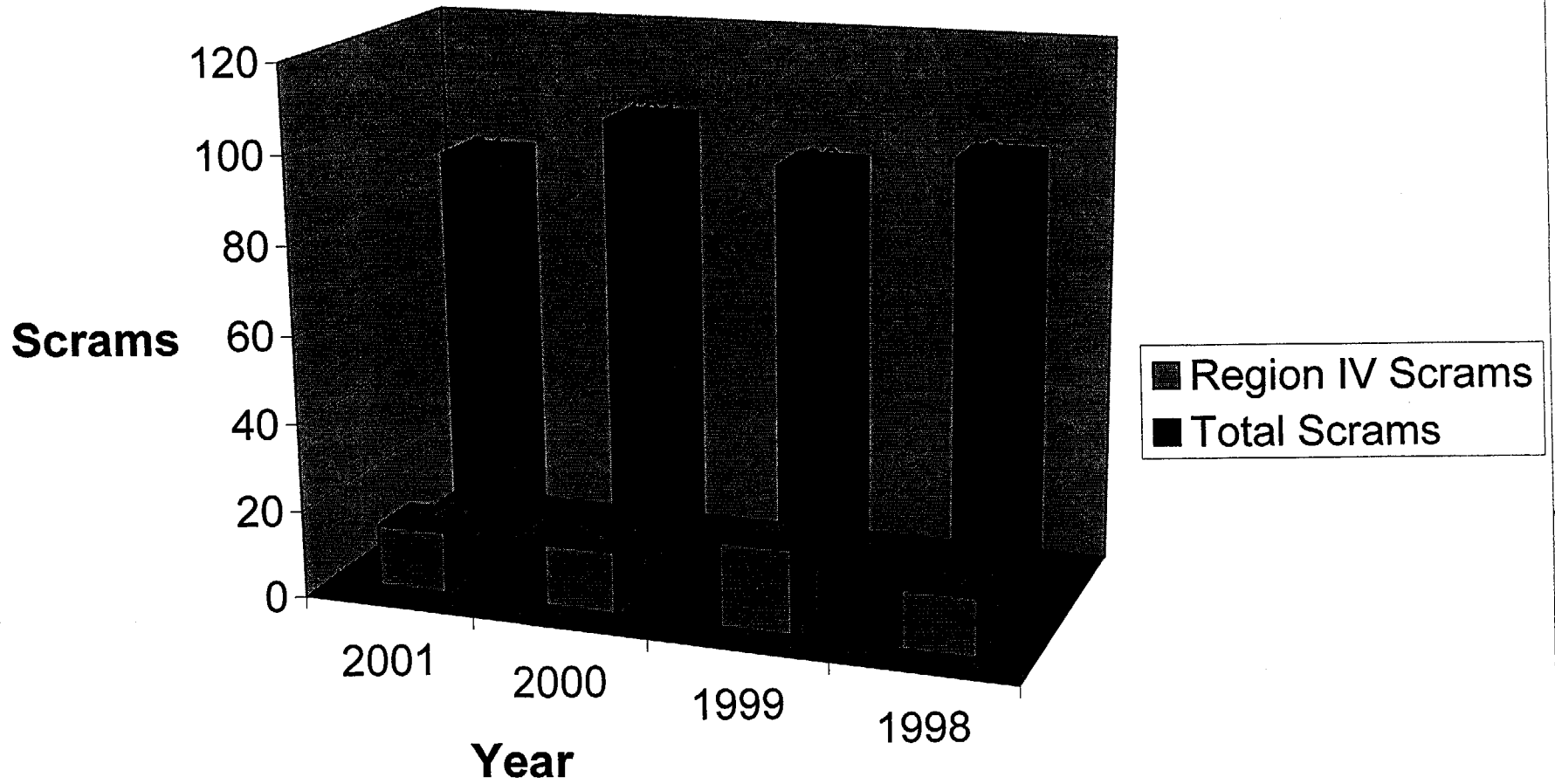
# Manual -vs- Automatic SCRAMS



# 2001 Scram Causes (Root and Contributing)

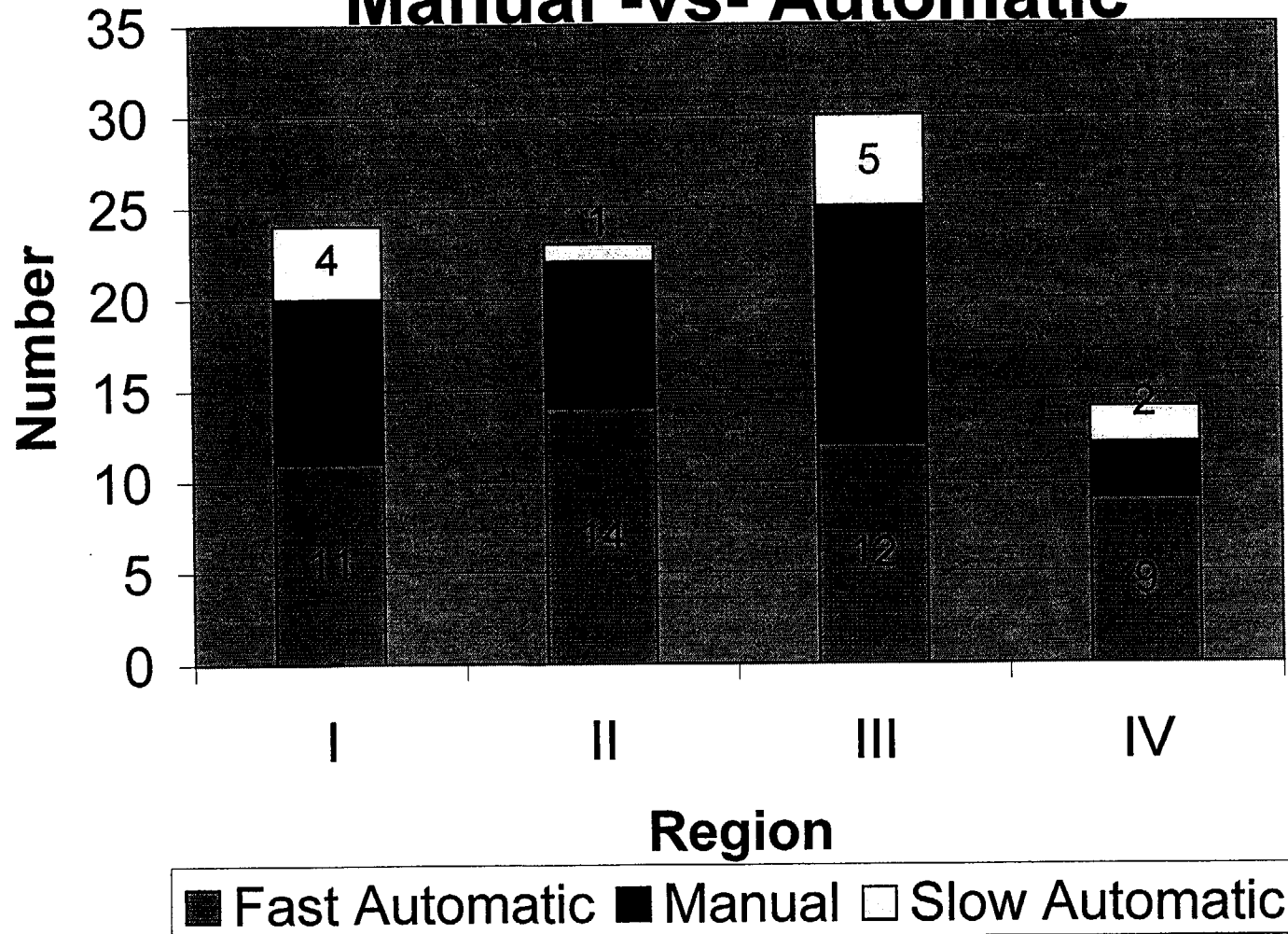


# Scram Trend



# 2001 SCRAMS

## Manual -vs- Automatic



## Exhibit 5 - ACTION MATRIX

	Licensee Response Column	Regulatory Response Column	Degraded Cornerstone Column	Multiple/ Repetitive Degraded Cornerstone Column	Unacceptable Performance Column	
RESULTS	All Assessment Inputs (Performance Indicators (PIs) and Inspection Findings) Green; Cornerstone Objectives Fully Met	One or Two White Inputs (in different cornerstones) in a Strategic Performance Area; Cornerstone Objectives Fully Met	One Degraded Cornerstone (2 White Inputs or 1 Yellow Input) or any 3 White Inputs in a Strategic Performance Area; Cornerstone Objectives Met with Moderate Degradation in Safety Performance	Repetitive Degraded Cornerstone; Multiple Degraded Cornerstones; Multiple Yellow Inputs; or 1 Red Input; Cornerstone Objectives Met with Longstanding Issues or Significant Degradation in Safety Performance	Overall Unacceptable Performance; Plants Not Permitted to Operate Within this Band; Unacceptable Margin to Safety	
RESPONSE	Regulatory Performance Meeting	None	Branch Chief (BC) or Division Director (DD) Meet with Licensee	DD or Regional Administrator (RA) Meet with Licensee	RA (or EDO) Meet with Senior Licensee Management	Commission meeting with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee root cause evaluation and corrective action with NRC Oversight	Licensee cumulative root cause evaluation with NRC Oversight	Licensee Performance Improvement Plan with NRC Oversight	
	NRC Inspection	Risk-Informed Baseline Inspection Program	Baseline and supplemental inspection procedure 95001	Baseline and supplemental inspection procedure 95002	Baseline and supplemental inspection procedure 95003	
	Regulatory Actions	None	Supplemental inspection only	Supplemental inspection only	-10 CFR 2.204 DFI -10 CFR 50.54(f) Letter - CAL/Order	Order to Modify, Suspend, or Revoke Licensed Activities
COMMUNICATION	Assessment Letters	BC or DD review/sign assessment report (w/ inspection plan)	DD review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan)	
	Annual Public Meeting	SRI or BC Meet with Licensee	BC or DD Meet with Licensee	RA (or designee) Discuss Performance with Licensee	EDO Discuss Performance with Senior Licensee Management	
	Commission Involvement	None	None	None	Plant discussed at AARM	Commission Meeting with Senior Licensee Management
	INCREASING SAFETY SIGNIFICANCE ----->					


Note 1: The regulatory actions for plants in the Multiple/Repetitive Degraded Cornerstone column are not mandatory agency actions. However, the regional office should consider each of these regulatory actions when significant new information regarding licensee performance becomes available.

# Regional Perspectives

Ellis Merschoff  
Regional Administrator  
NRC, Region IV



## Morning Session

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# 2001 Review of Plant Performance

Gary Taylor  
Senior VP/COO, EOI



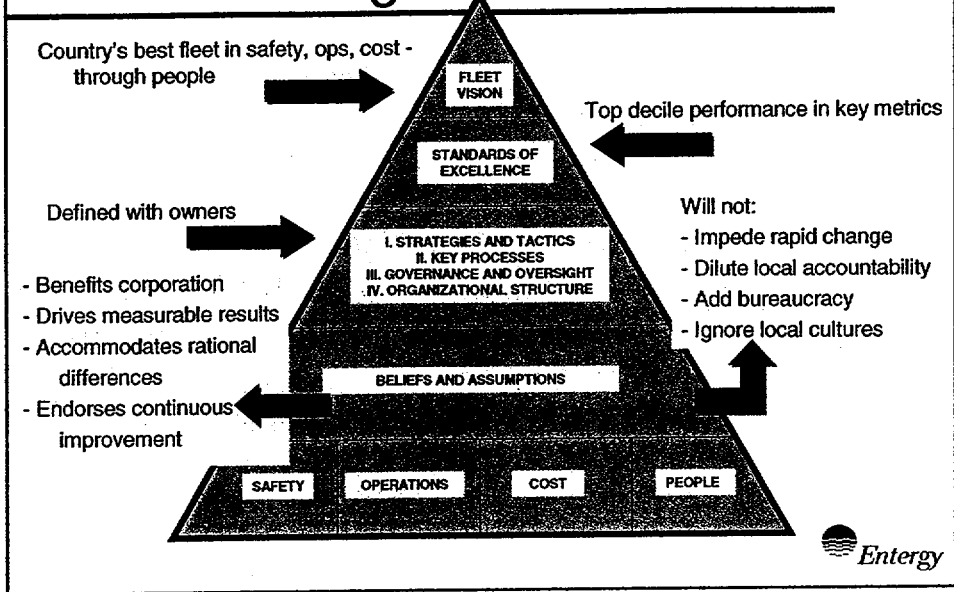
## Building the *best* nuclear fleet

- ▶ How?
  - Safety
  - Operations
  - Cost
  - People





# Fleet alignment model



# Fleet alignment model

I. Strategies & Tactics	II. Key Processes	III. Corporate Governance & Oversight	IV. Organizational Structure
Business Strategy	Annual Business Planning Cycle & Method	Rules of Engagement	Peer Groups
Standardization	Use of Operating Experience	Major Issues & Emergent Situations	Fleet approach to organization
Alliances	Standardization	Safety Policy	
Industry Involvement, EPRI and Owners Groups	Outage Management	Use of Risk Management Organization	
Benchmarking, Assist Visits, and Dissemination of Best Practices	Conduct of Operations		
Use of Operating Experience	Conduct of Maintenance		
Outage Management	Conduct of Engineering		
On-line Maintenance Philosophy	Conduct of Work Management		
Shared Resources	Conduct of Corrective Action		
Continuous Improvement Philosophy (Six Sigma, TQ, etc.)	Conduct of Procurement		
Developing People			
Communication			
Human Performance			
Equipment Reliability			
Learning Organization			
Asset Management			

**Each area is defined with an owner.**



## Standardization – One for all

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- ▶ > 200 Standard policies & procedures -  
*Nuclear Management Manual*
- ▶ Single QA manual -  
*South and Northeast*
- ▶ Paperless Condition Reporting System -  
*PCRS in place in South – phasing into Northeast*
- ▶ Corporate duty manager rotation -  
*Off-normal Situations policy*
- ▶ Operating Experience organization & process
- ▶ Standard Refueling organization & processes -  
*Outage Control Centers 24/7; daily status calls*



## Refueling outages

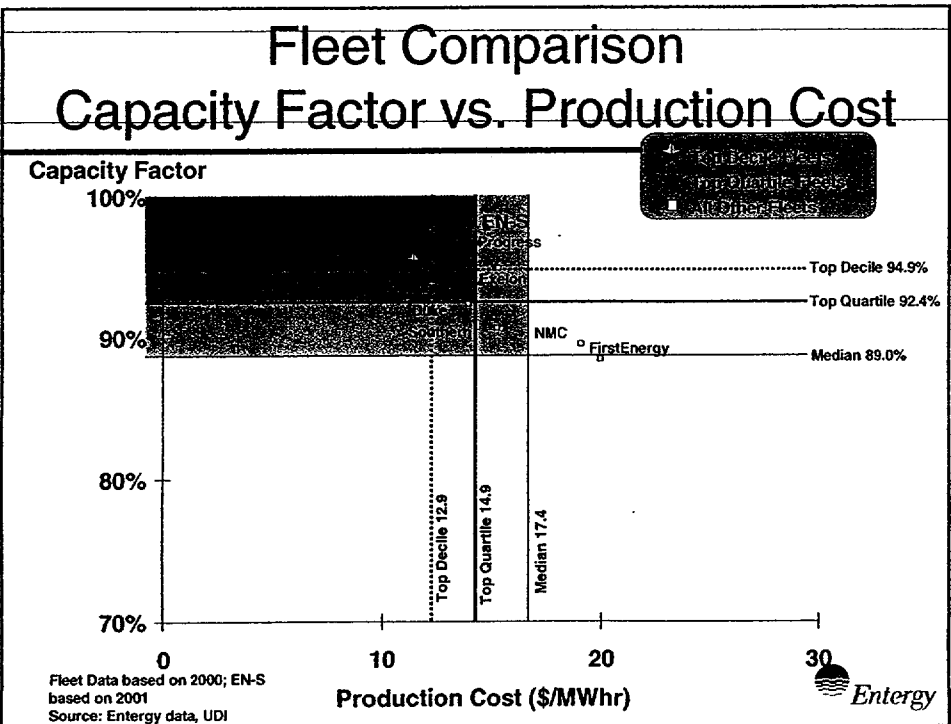
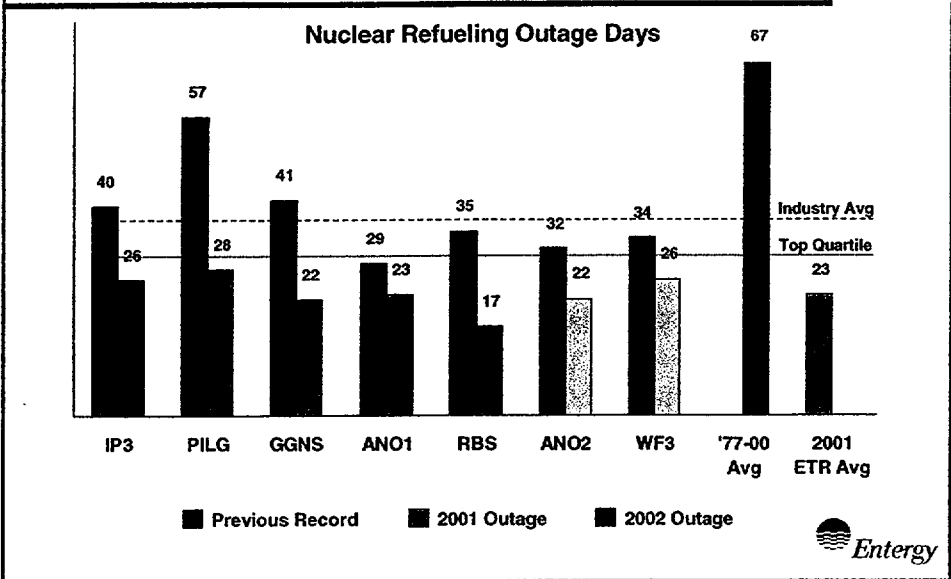
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In 2001, the five Entergy Nuclear sites  
in a refuel outage year shaved more than  
**three months**  
combined off their previous best durations.

2002's spring outages are continuing the trend.

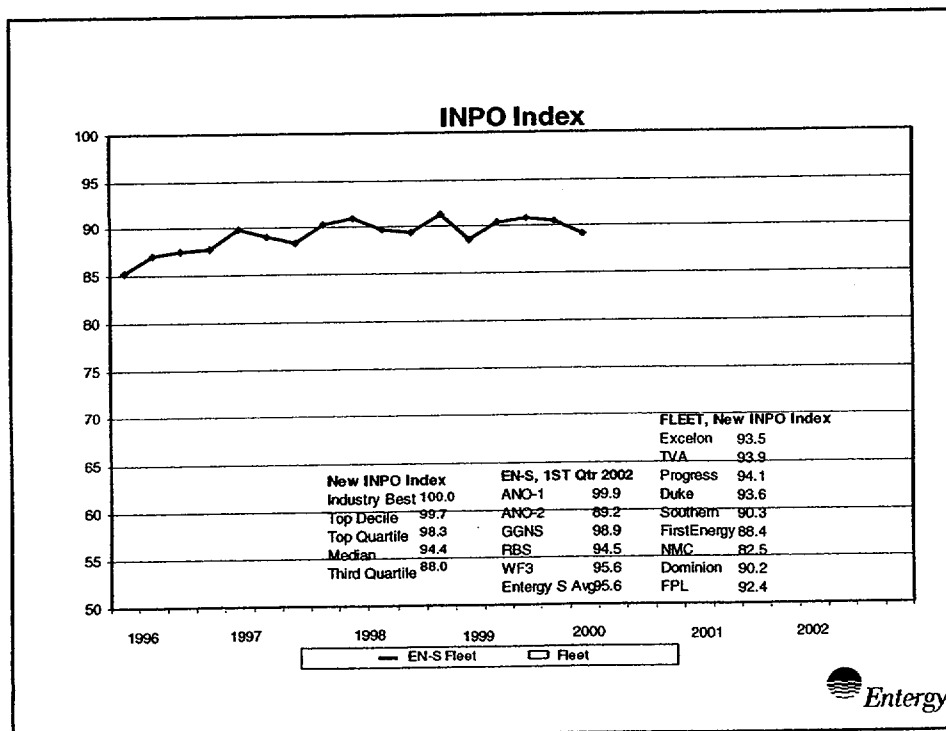
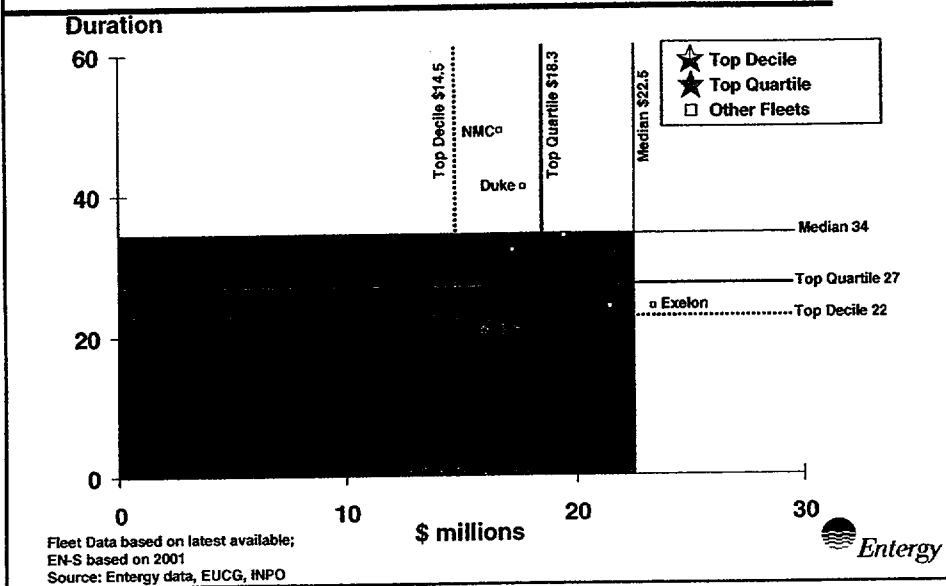


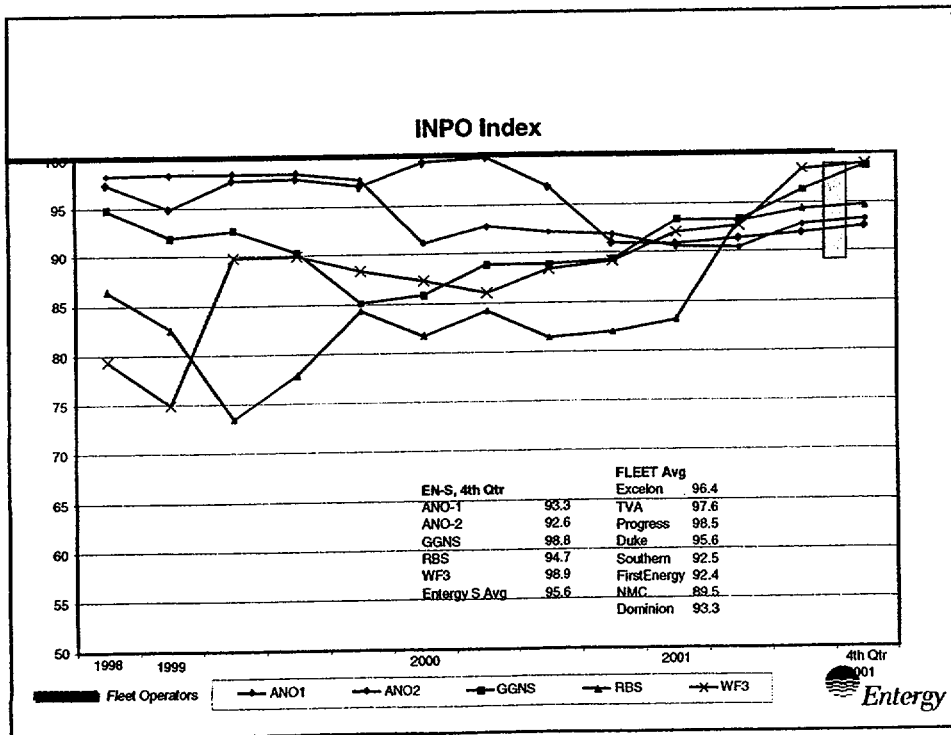
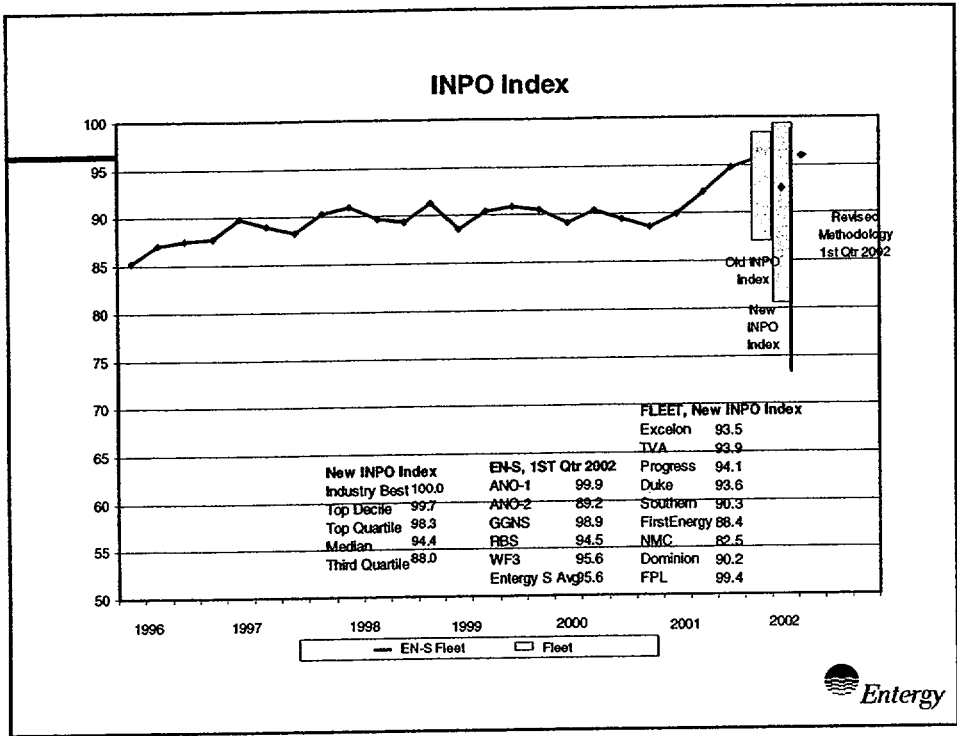
# Nuclear experience counts



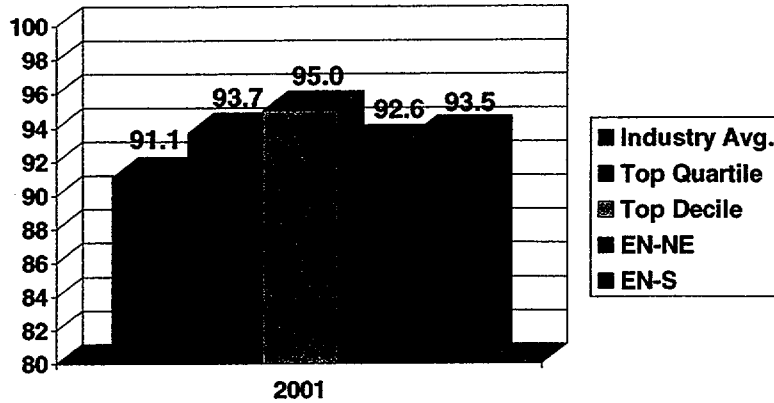
# Fleet comparison

## Outage duration vs. outage cost





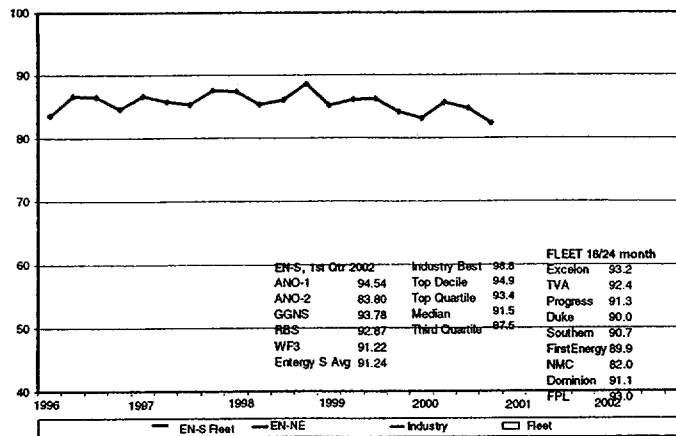
# 2001 Capability factor



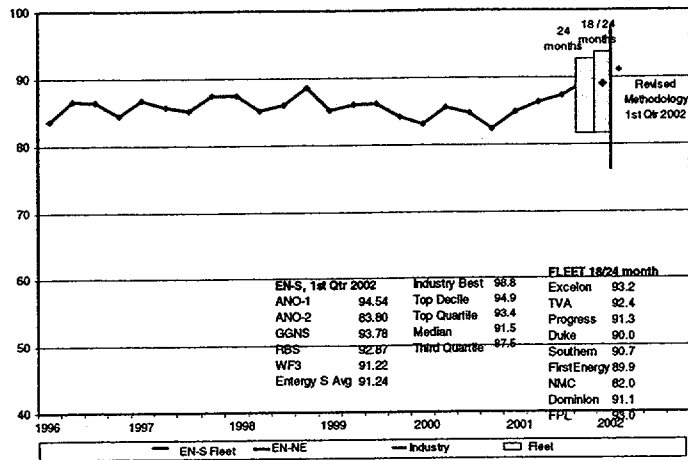
\* Industry numbers for 2 years ending 3Q '01



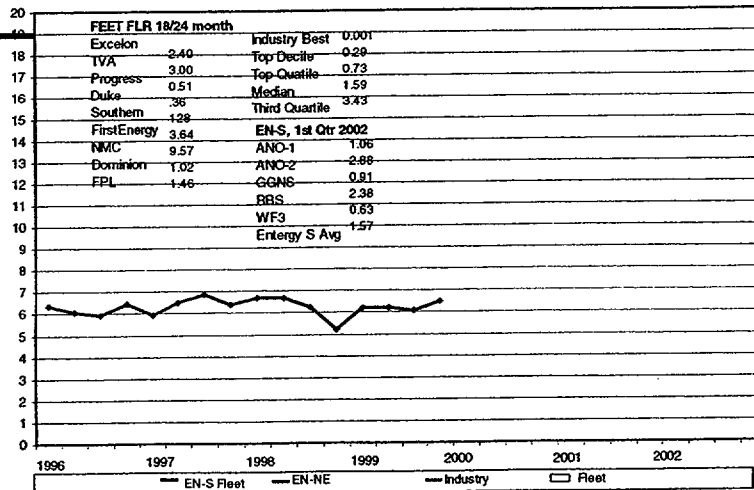
## Unit Capability Factor-2Yr



### Unit Capability Factor-2Yr

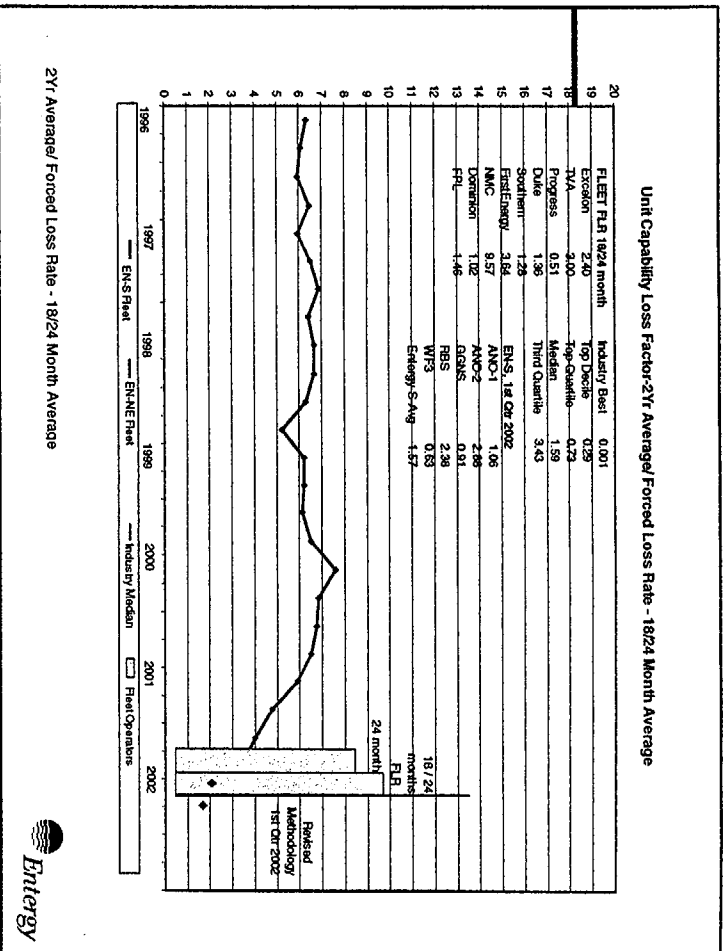


### Unit Capability Loss Factor-2Yr Average/Forced Loss Rate - 18/24 Month Average

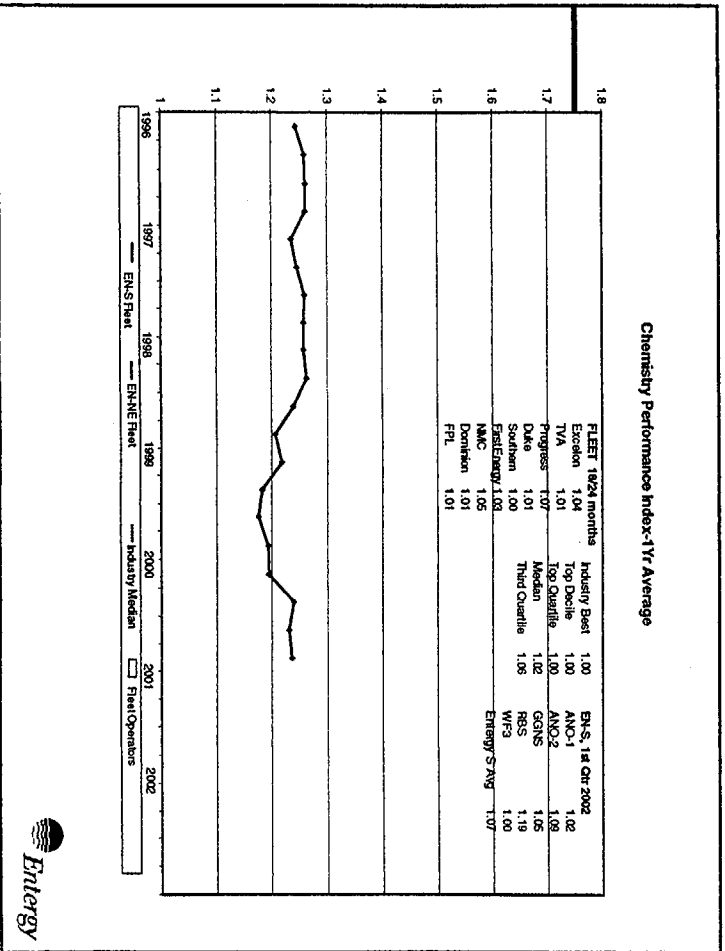


2Yr Average/ Forced Loss Rate - 18/24 Month Average

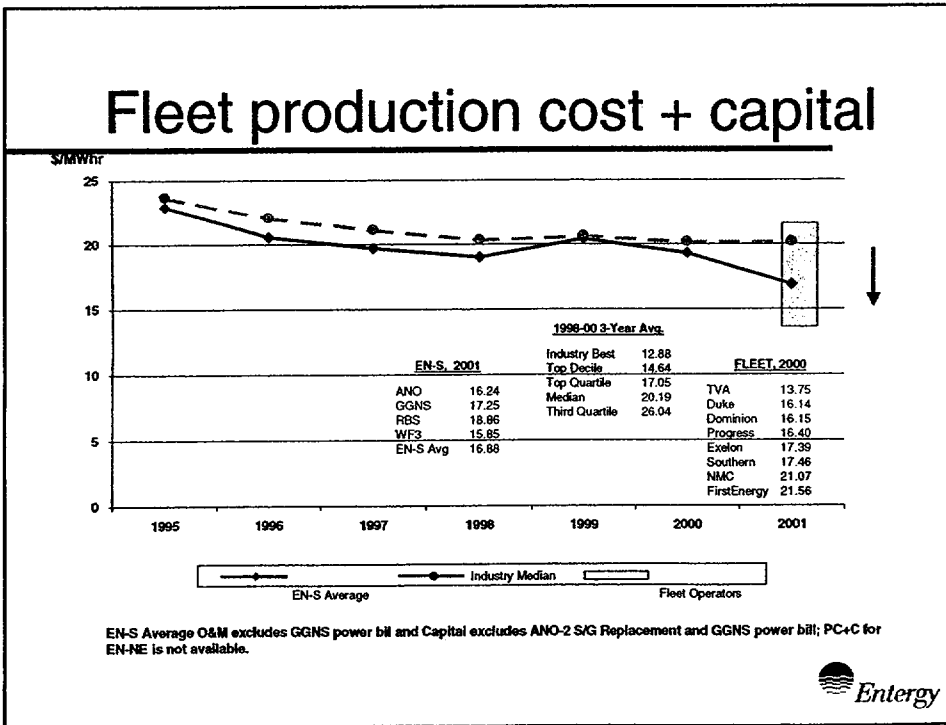
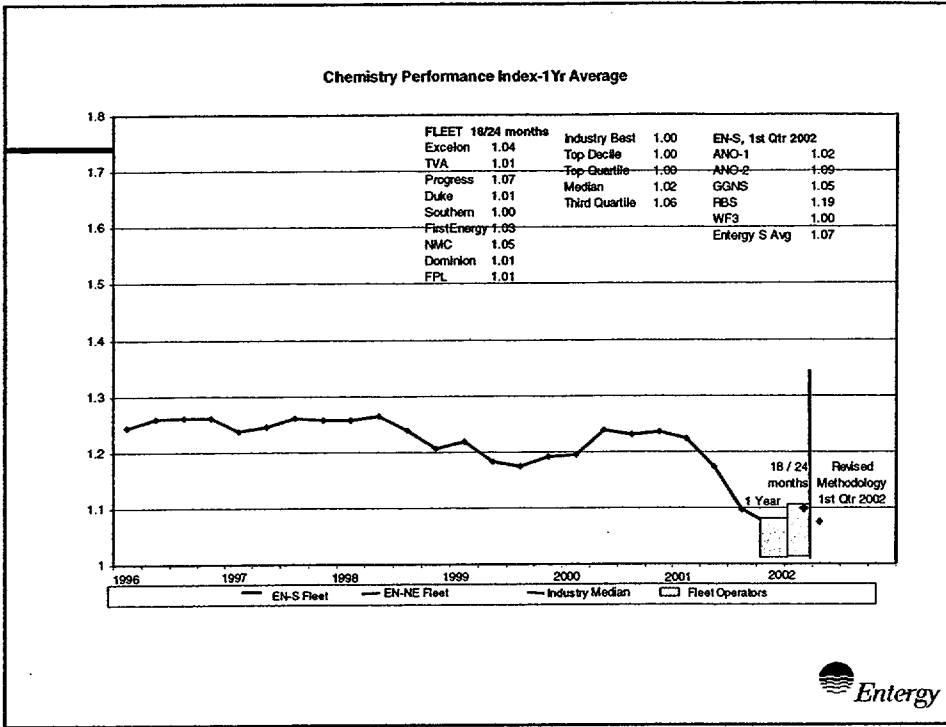




2Yr Average/ Forced Loss Rate - 18/24 Month Average





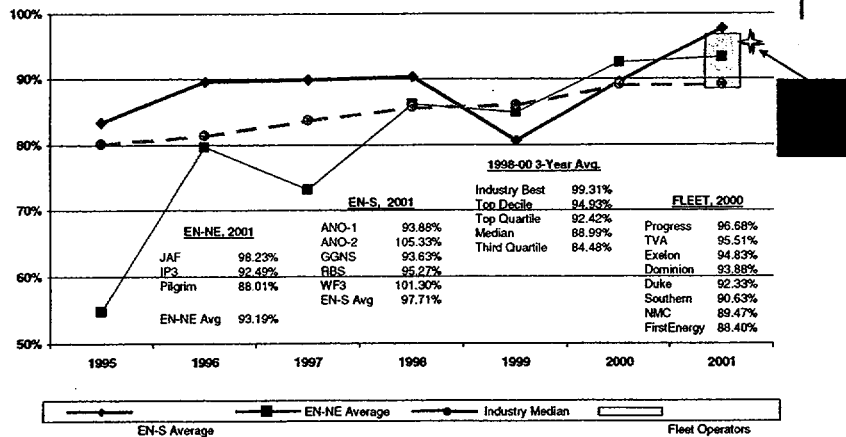


## 2001 Capacity factor

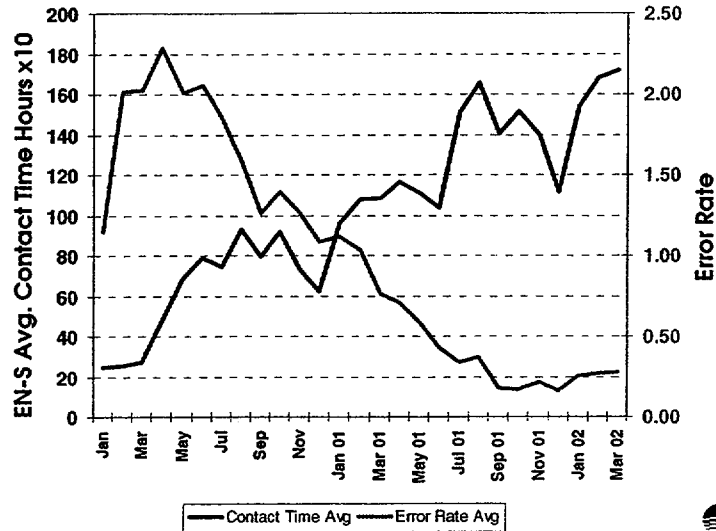
- **EN-NE**
  - ◆ 2001 Actual 92.7 %
  - ◆ 2001 Goal 92.3%
  
- **EN-S**
  - ◆ 2001 Actual 97.7 %
  - ◆ 2001 Goal 93.0 %
  - ◆ Previous Best ('98) 90.2 %
  
- **Entergy Nuclear Fleet** **95.9 %**



## Fleet capacity factor



## EN-S Human Performance Contact Time versus Error Rate 1/2000 - 3/2002



## Engineering

Move the organization from an engineering-focused organization to an operations-focused organization.

Integrate business goals with engineering goals and practices.



## Asset management/long range plans

- ▶ New process being implemented this year
- ▶ Replaces budgeting process with planned process
- ▶ Allows for integrated, joint review of 15-year site plans
- ▶ Categorizes capital costs into:
  - Equipment life cycle management
  - Fleet initiatives
  - Infrastructure/facilities
  - Recurring maintenance costs
- ▶ Requires joint VP forum review to align projects for maximum efficiency and benefit



## Other fleet success factors

- ▶ Industrial Safety
- ▶ Human Performance
- ▶ Equipment Reliability
- ▶ Maintenance Ownership
- ▶ Centralized Technical Groups
- ▶ Centralized Business Support Groups
- ▶ Vendor Alliances



## EN-S Self Assessment & Benchmarking

---

Jan. 1 2001 - Dec. 31, 2001

	Self Assessment	Benchmark
ANO	72	43
GGNS	76	31
RBS	61	38
W3	100	40
Echelon	25	8
Total	334	160



## Six Sigma

---

Six Sigma is a business system for achieving, sustaining and maximizing business success.

Six Sigma will help us further improve our processes.



## Six Sigma – A sampling of projects

### **Nuclear South**

- Reducing cost to plants for centralized IT functions
- Reducing planned non-refueling and forced outage generation losses related to large pumps and motors
- Improve forced outage preparation and execution
- Reduce time from RPV hydrostatic test to unit on-line to under 48 hours
- Improve the performance of work control process "choke points"

### **Nuclear Northeast**

- Reduce outage duration by optimizing critical/underlying critical path preventative maintenance tasks
- Reduce planned power reductions
- Improve reliability of critical generation equipment



## Alignment

- ▶ Goals
  - Fleet > Regions > Plant > Individual PP&Rs
- ▶ Incentives
  - Executive > Management > Professional > TeamSharing
- ▶ Consistent Expectations
- ▶ Consistent Metrics
  - Focused on trends, rather than discrete data points
- ▶ Communications
  - Formal and Informal
  - Face-to-Face
- ▶ Results vs. Activities
  - No "A" for Effort



## EN-S – Looking ahead

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Successes in 2001  
and some challenges for 2002



## EN-S – 2001 was the best year ever

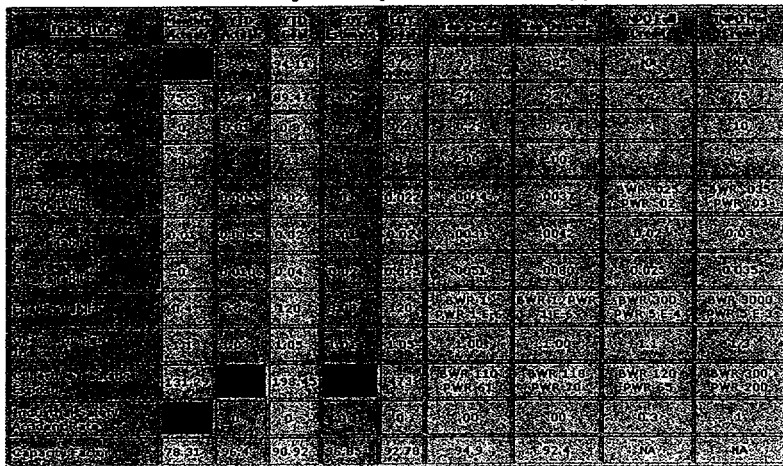
---

- ▶ **Safety**
  - NRC — all green performance indicator windows
  - INPO “1” at Waterford 3
  - Conservative Decision Making for operations employees
- ▶ **Operations**
  - 97.7% Capacity Factor
  - Record-breaking refueling outages - average 21 days
  - Over 3 million MWhr increase in generation over previous best
- ▶ **Cost**
  - Top Quartile Production Cost - \$14.77/MWhr
  - Top Quartile Production Cost plus Capital - \$16.88/MWhr
- ▶ **People**
  - OSHA VPP Star Level - ANO, RBS, W3 certified - GG recommended
  - Mentoring Program
  - Supervisory Skills Training
  - Developing Leaders Who Make A Difference



## EN-S today

### Performance Summary for Apr 2002: Entergy South



## 2002 – Building on the best

- ▶ **EN-S Region Commitments**
  - Average capability factor — 92% or higher
  - Average refueling outage duration — 30 days or less
  - All NRC performance indicator windows — Green
  - Average production cost — \$15.2 per MWhr or less
  - Average INPO Index during 2002 — 96% or higher
  - Significant improvements recognized and acknowledged by INPO
  - Accreditation of all training programs renewed
  
- ▶ **Focus Areas for Business Success**
  - 4 Refueling Outages
  - 2 INPO Evaluations in 2002 and 1 in January 2003
  - Equipment Reliability
  - Project Management & Work Management - Indus Passport
  - Alliances with GE and Westinghouse

Keep our eyes on the industry — not just each other!





## Regulatory Challenges

- ▶ Fleet performances at all time high
- ▶ Continuing regulatory challenges
  - Predictable regulatory processes
  - Risk informing significance determination
  - Changing interpretations of requirements
- ▶ Dialogue - Priorities - Understanding



## Entergy Nuclear

*...a fleet with a focus*



## Morning Session

7:00	Early Morning Coffee	
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## EOI / NRC SENIOR MANAGEMENT MEETING

### NRR Issues

Tad Marsh  
Acting Deputy Director  
Division of Licensing Project  
Management  
Office of Nuclear Reactor Regulation  
June 6, 2002



## SIGNIFICANT LICENSING ACTIONS AND ACTIVITIES

- ▶ EOI Generic
- ▶ Plant-Specific – some brief remarks
  - ANO-1
  - ANO-2
  - Grand Gulf
  - River Bend
  - Waterford



## EOI GENERIC

### ▶ Exemption request - definition of TEDE

- Progress made
- ▶ Four recent relief requests
  - Quality of 2 of the submittals about average
  - EOI staff worked well to resolve questions
  - Submittals were late
- ▶ Caldon LEFM application
  - Topical was a quality application
  - NRC able to approve in timely manner
- ▶ PLHR Safety Limit
  - Timely exigent TS submittal
  - Quality application
  - New SL approved ...peak fuel centerline temperature



## ANO-1

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- ▶ License renewal – approved June '01
- ▶ Conversion to ISTS – approved Oct. '01
- ▶ Smaller, routine licensing work of high quality
- ▶ Find that across the board, applications are of high quality
- ▶ Quality and timely responses to RAIs



## ANO-2

---

- ▶ 7.5% power uprate - approved April '02
  - Large, complex effort
  - Quality application
- ▶ Smaller, routine licensing work of high quality
  - One-time EDG/AOT extension – risk informed
  - Revised P/T LTOP limits and exemption from 50.60
- ▶ Find that across the board, applications are of high quality
- ▶ Quality and timely responses to RAIs



## Grand Gulf & River Bend

▶ **GG - 1.7% power uprate**

- References EOI generic topical
- Quality responses to RAIs

▶ **GG - Other, routine licensing work of high quality**

- EOC-recirculation pump trip; rod scram time test

▶ **GG - Across the board, applications are of high quality**

▶ **RB - Recent licensing work of high quality**

- EDG/AOT extension; turb bldg hi-temp input to MSIV

▶ **RB - Heavy licensing activity over next 6 months**

- AST application; 6 new applications

▶ **RB - Need to maintain quality/timely responses to RAIs to support Spr. '03 outage**



## Waterford

▶ **1.5% power uprate - approved March 2002**

- Quality responses to RAIs

▶ **Other, routine licensing work of high quality**

- Replacement of part-length CEAs
- ILRT extension

▶ **Find that across the board, applications are of high quality**

▶ **Quality and timely responses to RAIs**



## EOI/NRC WORKING RELATIONSHIP



## Quality of Communications

- ▶ Excellent
- ▶ Regularly scheduled licensing status calls help focus on the important issues
- ▶ Phone calls promptly returned
- ▶ How is NRC/Projects staff doing?



## Quality of Applications

---

- ▶ Quality applications and quality responses to RAIs
  - Comprehensive applications
  - Responses to RAIs generally excellent quality
    - One round of RAI usually resolves issue
- ▶ Significant issues worked/resolved aggressively (TEDE, MNSA-2, Caldon LEFM, PLHR, ISTS, license renewal, ANO-2 uprate, smaller uprates)



## New/Complicated Issues, Industry Leadership

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- ▶ Power uprates
- ▶ Alternate source term implementation
  - Recent River Bend application takes advantage of 2001 rulemaking in AST
- ▶ Exemption from TEDE
- ▶ Use of MNSA-2 on pressurizer nozzles & sleeves
- ▶ Kaowool removal



## August 2001 EOI/NRC Licensing Workshop

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- ▶ Staff from NRR/DLPM and Entergy (corporate and sites from South and Northeast) met on August 28 and 29, 2001
- ▶ Topics discussed included:
  - Licensing processes and practices
  - Entergy self-assessment
  - How to improve communications



## SUMMARY REPORT

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- ▶ See improvements in planning, scheduling, and quality of work products
- ▶ Generally high quality applications and responses to RAIs
- ▶ Generally provide enough review time, except for the 4 relief requests
- ▶ Took last year's NRC issues seriously, challenged yourselves, and improved
- ▶ Engineering and licensing are working as an integrated team to get us timely submittals





EOI / NRC SENIOR  
MANAGEMENT MEETING

CONCLUSION

Tad Marsh  
Acting Deputy Director  
Division of Licensing Project  
Management




B  
R  
E  
A  
K



## Morning Session

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7:00	Early Morning Coffee	
7:20	Welcome & Introductions	Jerry Yelverton
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## Waterford 3 Performance

Joe Venable  
Site Vice-President, Operations  
Tom Farnholtz  
NRC Region IV, Senior Resident  
Waterford 3



## Highlights of the Last 12 Months

---

- ▶ **Safety Performance**
  - VPP STAR Certification
- ▶ **RF-11, safest and most successful**
  - Operations error free outage
  - Reactor Vessel Head Inspection
  - Alloy 600 Inspection
- ▶ **INPO 1**



## Highlights of the Last 12 Months (cont)

---

- ▶ **Plant Performance**
  - 401 days of operation prior to RF-11
  - Significant reduction in backlogs
  - Successful Emergency Planning Exercise
  - Operator Training Accreditation Renewal
  - Some equipment challenges
- ▶ **Leadership Changes**



## Top Plant Priorities

---

- ▶ **Equipment Reliability**
  - Addressing long standing equipment issues
- ▶ **Human Performance**
  - Departmental clocks
  - Coaching/mentoring
- ▶ **Personnel Development**
  - Strong leadership alignments
  - Internal growth
  - External hiring



## Plans to Address Top Plant Priorities

---

- ▶ **Equipment Reliability**
  - Tackling long standing equipment issues
    - Main Turbine Exciter bearing vibration
    - Safety Injection Venting
    - Fire impairments
    - Maintenance Backlog Reduction
    - Sodium ingress (MIC attack on stainless steel tubes)
  - Equipment Issues Prioritized
  - Aggressively focusing on resolution



## Plans to Address Top Plant Priorities

---

### ▶ Human Performance

- Stand down emphasizing potential error traps
- Increases focus on coaching and pre-job briefing
- Departmental clocks

### ▶ Personnel Development

- Employee Development & Succession Planning
- Promotional/Rotational positions onsite
- INPO assignments
- Outside Integration



## Focus on the Future

---

- ▶ A1 Systems
- ▶ Top Ten List
- ▶ Human Performance
- ▶ Personnel Development
- ▶ Passport Conversion
- ▶ RF-12 Preparations



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# **WATERFORD 3 PERFORMANCE INSIGHTS**

**Presented by Tom Farnholtz  
Senior Resident Inspector**



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# **PERFORMANCE INSIGHTS FROM OVERSIGHT PROCESS**

- ▶ **Inconsistent Human Performance**
  
- ▶ **Multiple Low Pressure System Challenges**



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## **INCONSISTENT HUMAN PERFORMANCE**

- ▶ **Decline Noted Following INPO 1 Rating**
- ▶ **Improved Human Performance Noted During RF-11**



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## **MULTIPLE LOW PRESSURE SYSTEM CHALLENGES**

- ▶ **Multiple Equipment Failures**
- ▶ **Longstanding Voiding Issues Not Resolved**
- ▶ **Challenges to Engineering and Operations Personnel**



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## **PERFORMANCE INSIGHTS FROM EVENTS**

- ▶ **Maintenance Process Ownership and Implementation**
- ▶ **Organization Interface**



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## **MAINTENANCE PROCESS OWNERSHIP AND IMPLEMENTATION**

- ▶ **Work Management System**
- ▶ **Maintenance Ownership Program Implementation**





---

# **ORGANIZATION INTERFACE**


▶ **Operations and Engineering Interface**

▶ **Acceptance of Operational Issues**



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## **Morning Session**

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## RBS Performance

Paul Hinnenkamp  
Site Vice President, Operations  
Peter Alter  
NRC Region IV, Senior Resident River Bend



## Highlights of the Last 12 Months

---

- ▶ **Management Changes**
- ▶ **Voluntary Protection Program**
- ▶ **Safe and timely completion of RF-10**
- ▶ **Performance Improvements**
  - **Corrective Action/Self Assessments**
  - **Operations Leadership**
  - **Work Management**



## Top Plant Priorities

---

- ▶ **Operating Plan Initiatives**
  - Operations Leadership
  - Corrective Action/Self Assessment
  - Work Management
  - Equipment Reliability
  - Human Performance



## Plans to Address Top Plant Priorities

---

- ▶ **Achieve Organizational Alignment**
  - Horizontal/Vertical
  - Detailed Action Plans
- ▶ **Improve Organizational Effectiveness**
  - Mutual Accountability
  - Focus on "in-field" coaching
- ▶ **Emphasize Communications**
  - Performance Indicator visibility
  - Supervisors' Forum
  - Phone Paul



## Focus on the Future

---

- ▶ Site Operating Plan Initiatives
- ▶ E-Plan Exercise June 2002
- ▶ INPO E&A in December 2002
- ▶ Ops Training Accreditation Spring 2003
- ▶ Outage Preparation Spring 2003



## **RIVER BEND PERFORMANCE INSIGHTS**

**Presented by Peter Alter  
Senior Resident Inspector**



## **PERFORMANCE INSIGHTS FROM OVERSIGHT PROCESS**

### **CONTINGENCY PLANNING**

- ▶ **Off Gas Post Treatment Radiation Monitor**
- ▶ **Main Turbine Control Power Supply**
- ▶ **Fire Water & Division I Outage Week**



## **PERFORMANCE INSIGHTS FROM EVENTS**



**Planned Outage 02-01**




# PERFORMANCE INSIGHTS FROM EVENTS

## REACTOR SHUTDOWN

- ▶ High Level Trip of Reactor Feed Pump
- ▶ “Just in Time” Shutdown Training
- ▶ Schedule Pressure



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## GGNS Performance

Bill Eaton  
Site Vice President, Operations  
Tim Hoeg  
NRC Region IV, Senior Resident GGNS



## Highlights of the Last 12 Months

- ▶ **RF 11, safest and best overall outage ever**
- ▶ **Performance improvements**
  - Operations Leadership
  - Workload and Backlog reductions
  - Self Assessments
  - Overall Chemistry Index
  - Human Performance, including Coaching
  - Safety System Availability
- ▶ **Voluntary Protection Program**
- ▶ **Maintenance Ownership**
- ▶ **E-Plan Exercise**
- ▶ **NRC Engineering Inspection**



## Top Plant Priorities

---

- ▶ Daily Schedule Effectiveness
- ▶ Further Backlog Reductions
- ▶ Industrial Safety and Error Prevention Behaviors
- ▶ Equipment Reliability
- ▶ Materiel Condition and Infrastructure outside the Power Block
- ▶ Dose Reductions during Refueling Outages
- ▶ Broader use of Operating Experience



## Plans to Address Top Plant Priorities

---

- ▶ **Organizational Alignment & Effectiveness**
  - Improved work management and scheduling
  - Continued emphasis in on-line maintenance
  - Assessments and Benchmarking
  - Continued use of Shared Resources and Fleet Concepts
  - Aggressive use of Project and Outage Scope Challenges
  - Maintenance Ownership
- ▶ **Emphasize Communications**
  - Goal Setting and Performance Indicators
  - Supervisors' / All-Hands Meetings
  - Daily Communications Sheet





## Focus on the Future

---

- ▶ **Operational Excellence Plan**
  - 23 Topical Areas and Initiatives that Characterize Excellence Goals of the Plant and the Fleet
- ▶ **RF 12 Outage**
- ▶ **Generation and Efficiency Improvements**
  - Auxiliary Cooling Tower
  - Appendix 'K' Uprate
- ▶ **INPO E&A , January 2003**
- ▶ **Technical Training Program Renewal, Jan. 2003**



## **GRAND GULF PERFORMANCE INSIGHTS**

**Presented by Tim Hoeg  
Senior Resident Inspector**



## **PERFORMANCE INSIGHTS FROM OVERSIGHT PROCESS**

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- ▶ **Combustible Controls**
- ▶ **Maintenance Rule**
- ▶ **Design Control**



## **COMBUSTIBLE CONTROLS**

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- ▶ **Permits**
- ▶ **Flammable Liquid Storage**
- ▶ **Exclusion Areas**
- ▶ **Kaowool and 1 hour Fire Watches**



## **MAINTENANCE RULE** **(10 CFR 60.65)**

- ▶ **System Engineering Ownership**
- ▶ **Functional Failures**
- ▶ **Maintenance Risk Assessment**



## **DESIGN CONTROL**

- ▶ **EOC-RPT**
- ▶ **Actual Field Configuration**
- ▶ **EDG Heat Exchanger Foundations**



# **PERFORMANCE INSIGHTS FROM EVENTS**

- ▶ **13 Jet Pump plugging**
- ▶ **Division II Emergency Diesel Generator NOED**
- ▶ **RHR 'A' Non-Code Repair**



## **13 JET PUMP**

- ▶ **Notification**
- ▶ **Operability Determination**
- ▶ **Standing Orders**



## **DIVISION II EDG (NOED)**

---

- ▶ **Notification LER 2002-01**
- ▶ **Corrective Actions**
- ▶ **Repeat Failures**



## **RHR 'A' NON-CODE REPAIR**

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- ▶ **ASME Code Case Request**
- ▶ **Follow up Inspections**
- ▶ **Missed Commitment**



## Morning Session

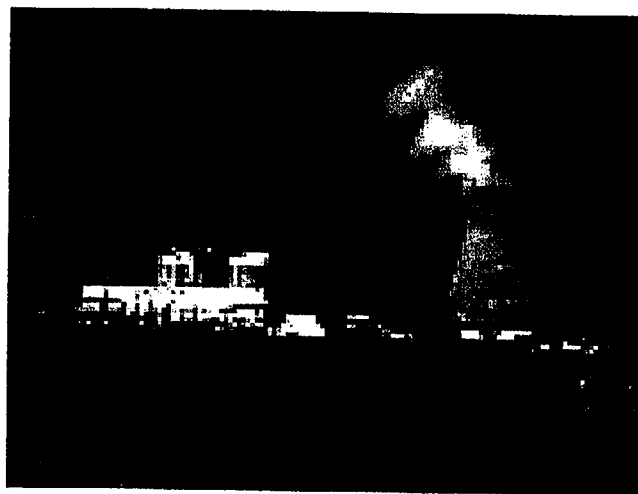
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## ANO Performance


Craig Anderson  
Site Vice President, Operations  
Kathy Weaver  
NRC Region IV, Resident Inspector  
Arkansas Nuclear One





# Arkansas Nuclear One 2R15



- 
- Reactor Vessel Head Inspection
  - LP Turbine Backpressure
  - Pressurizer A-600 Inspection/Repair
  - Power Uprate Complete
  - Focused on Equipment Performance
    - Major Component Overhauls (EFW Pump Turbine, MSIV, BOP Equipment)
    - Trip Hardening BOP Equipment
    - Addressing Obsolescence / Unreliability Issues
    - Testing / Inspections (FAC, CST Lid)





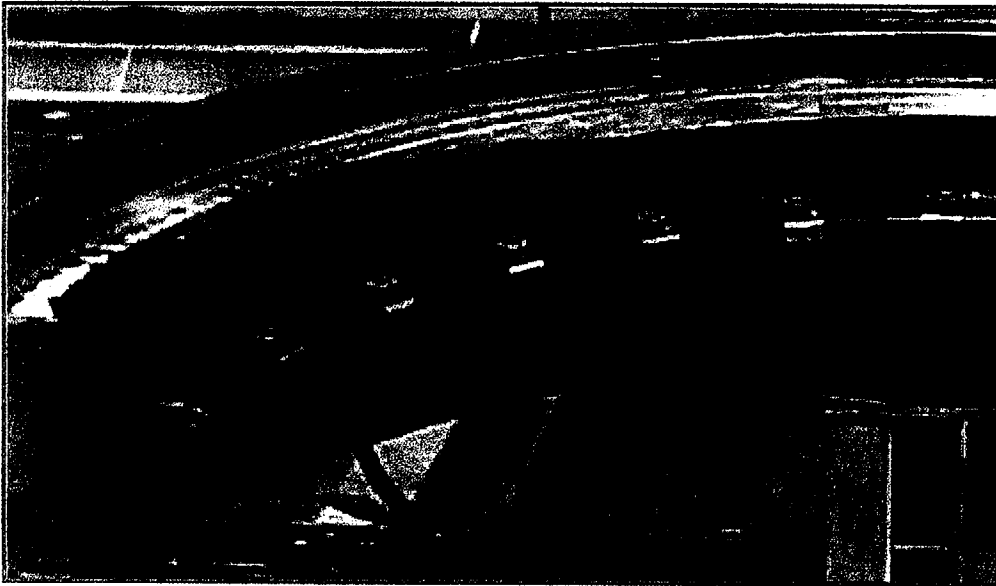
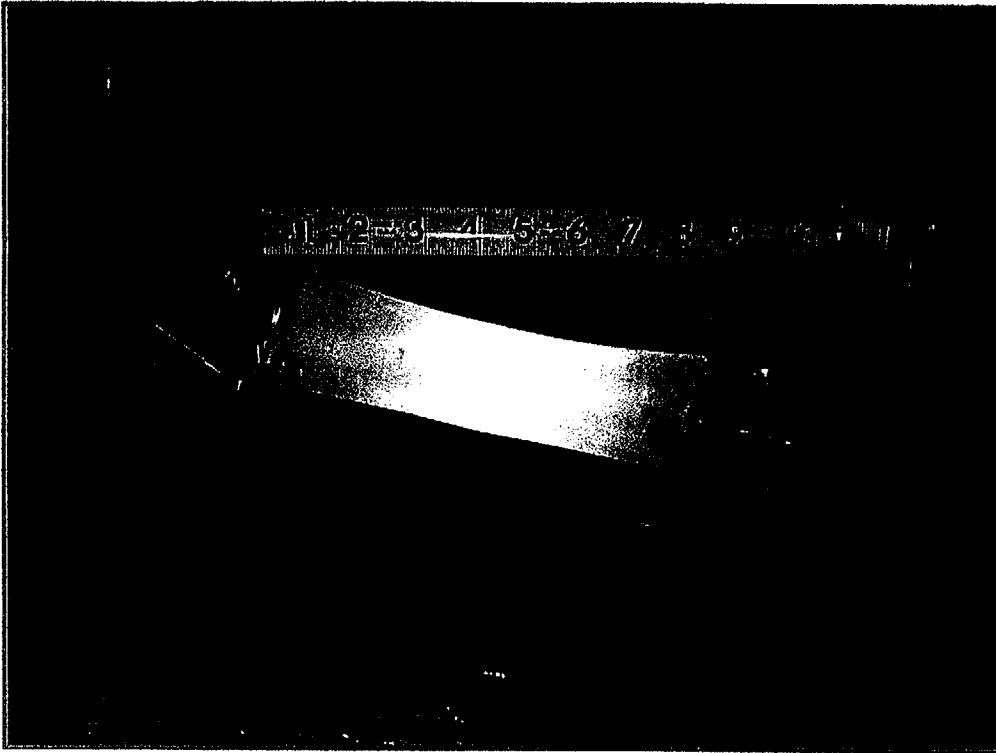
## Major Lessons Learned

- Better predict Shutdown Dose Rates
- Need for long range plan for managing PZR Alloy-600 issue
- Better contractor integration into outage project planning

## 7th Stage Diaphragm Repair

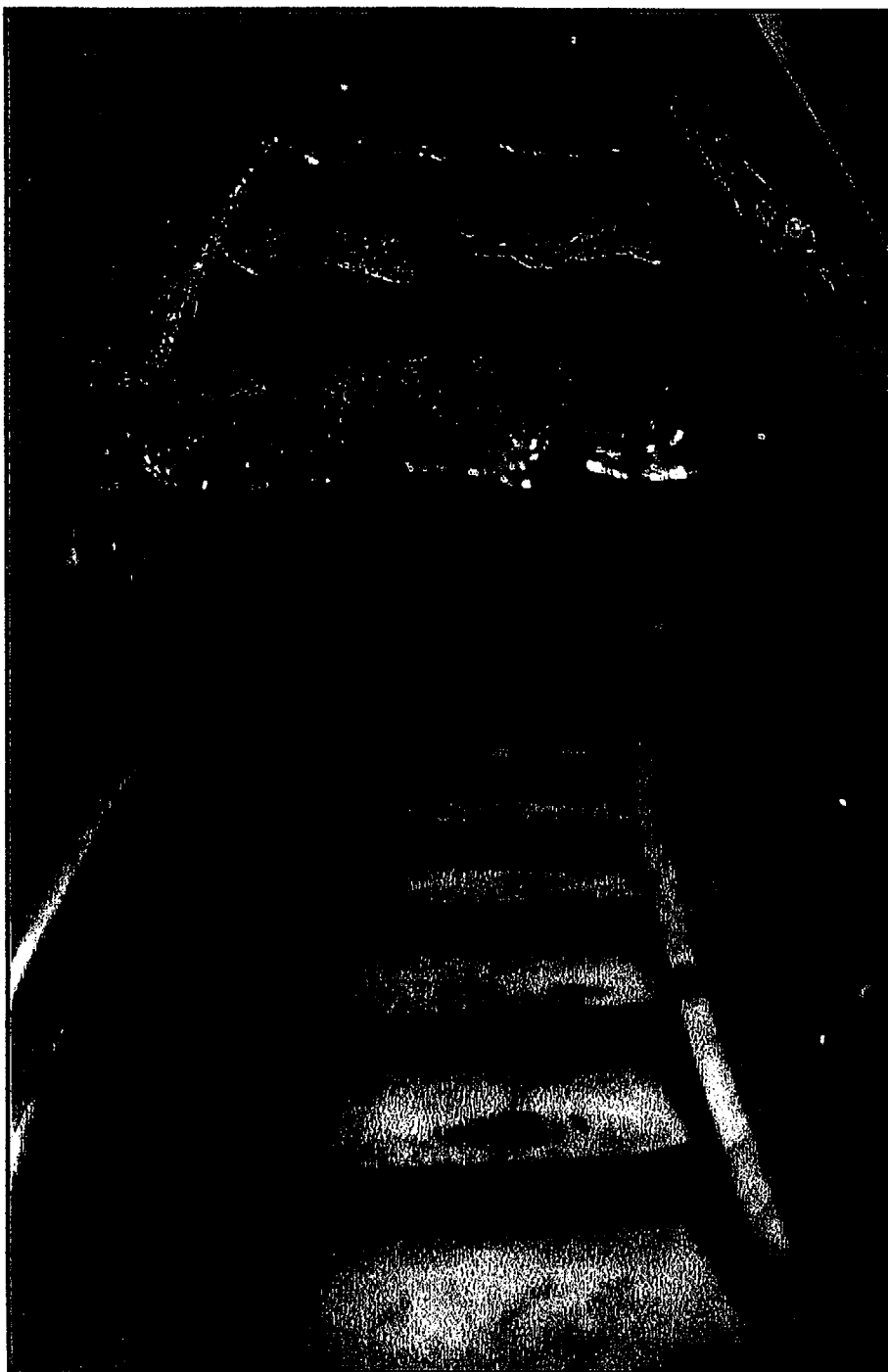
As-Found Lock-Plate Condition  
Most did not have the center section intact

As-Left Lock-Plate Condition



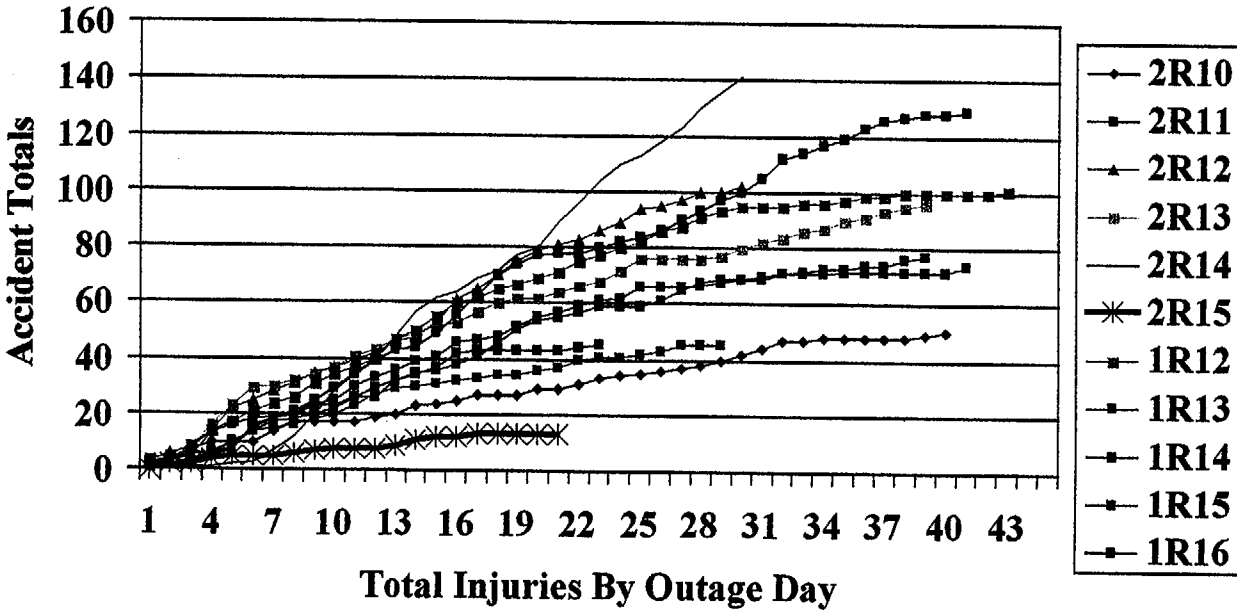
## 7th Stage Diaphragm Repair

As-Found Condition

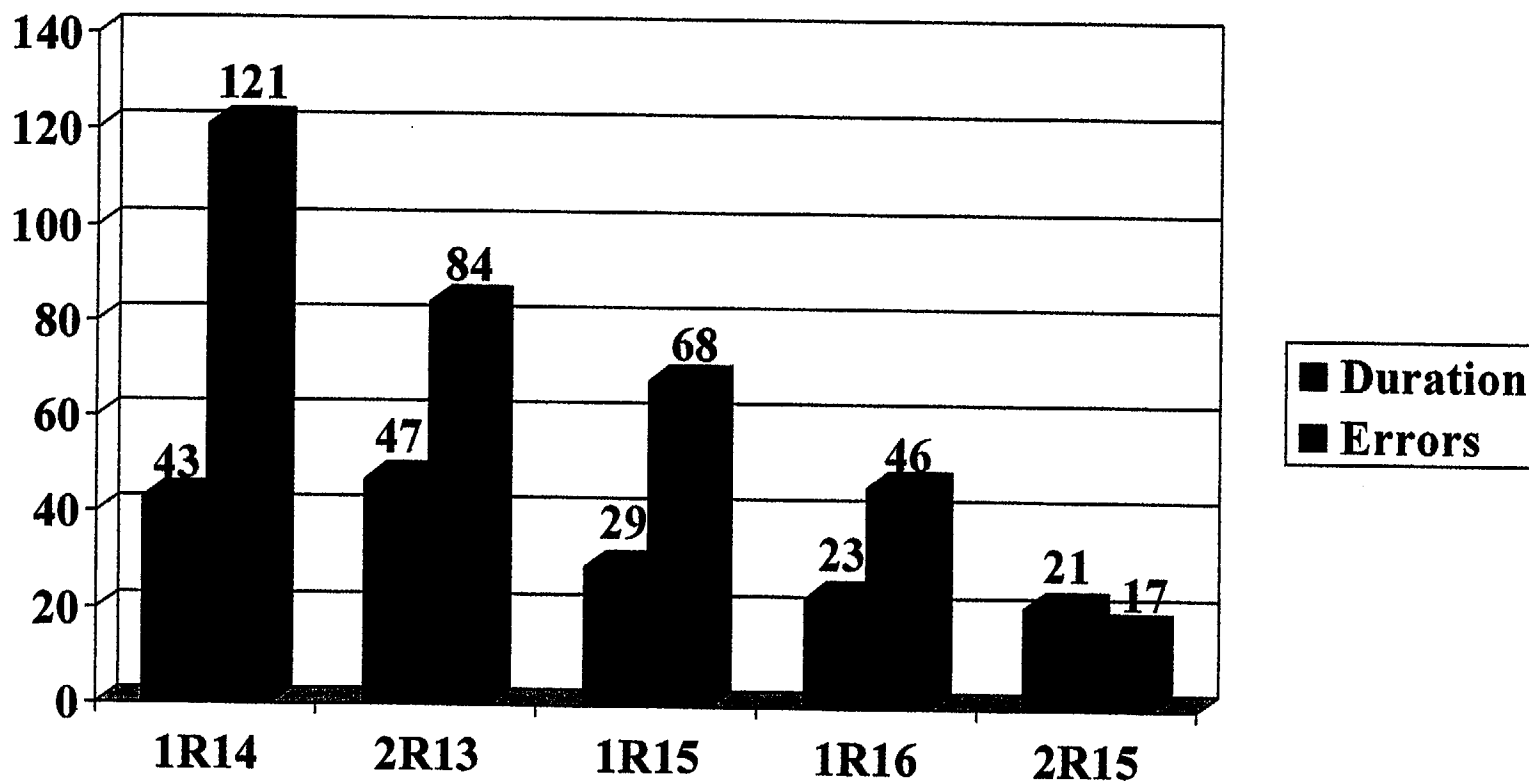


As-Left Condition

# 2R15 Injury Comparisons



## 2R15 Human Performance Comparisons



## Highlights of the Last 12 Months

---

- ▶ Unit 2 refueling outage
- ▶ Unit 2 power uprate
- ▶ Emergency Planning graded exercise
- ▶ Accreditation renewal of the technical training program
- ▶ Performance improvements
  - Operation leadership   ▪ Equipment reliability
  - Backlog reduction      ▪ Assessment culture
  - Human performance   ▪ Individual and organizational accountability
- ▶ Maintenance ownership



## Top Plant Priorities

---

- ▶ Operations leadership
- ▶ Equipment performance
  - Unit 1 and 2 Inconel-600
  - Unit 2 excore detectors
  - Unit 1 and 2 obsolescence issues
- ▶ Human performance
- ▶ Industrial safety performance



## Focus on the Future

---

- ▶ INPO evaluation and assessment, July 2002
- ▶ Unit 1 Improved Technical Specifications implementation, July 2002
- ▶ Unit 1 refueling outage
- ▶ Unit 1 steam generator replacement
- ▶ Unit 1 reactor vessel head replacement



## Plans to Address Top Plant Priorities

---

- ▶ ANO Operating Plan
  - Includes initiatives in safety, operations, cost, and people
  - Specific objectives, measures, and targets for each initiative
  - Target focus on achieving excellence
- ▶ Long Range Plan
  - Focuses on capital and infrastructure
  - Will enable better resource loading
  - Leverage needs of the fleet



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# **ARKANSAS NUCLEAR ONE PERFORMANCE INSIGHTS**

**Presented by Kathy Weaver  
Resident Inspector**



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## **PERFORMANCE INSIGHTS FROM OVERSIGHT PROCESS**

- ▶ **Worker Fatigue from Excessive Overtime**
- ▶ **Inadequate Implementation of Licensing Commitments**





---

## **WORKER FATIGUE FROM EXCESSIVE OVERTIME**

- ▶ **Fatigue Increases Errors**
- ▶ **Technical Specifications Limit Overtime**
- ▶ **2R15 Refueling Outage Observations**



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## **INADEQUATE IMPLEMENTATION OF LICENSING COMMITMENTS**

- ▶ **Compensatory Measures for EDG  
Extended Outages**
- ▶ **AAC DG Availability During Outages**



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# **PERFORMANCE INSIGHTS FROM EVENTS**

## **▶ Alloy 600 Issues**



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# **ALLOY 600 ISSUES**

- ▶ Unit 1 Reactor Vessel**
- ▶ Unit 2 Reactor Vessel**
- ▶ Unit 2 Pressurizer - NUE**



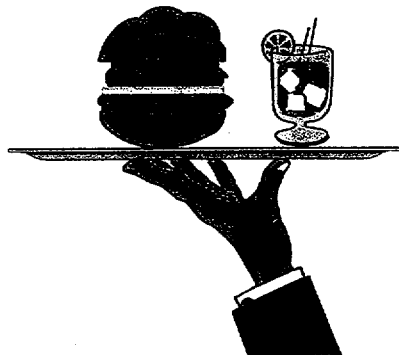
## Afternoon Session

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12:40	Lunch	
1:15	Engineering Issues	Bill Campbell
1:45	Operations Support	George Williams
2:15	Closing Remarks	Entergy/NRC
2:30	Adjourn	



# LUNCH



## Afternoon Session

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## Engineering Issues

Bill Campbell  
Vice President, Engineering



## EN-S Engineering Issues

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- ▶ SG Inspection Status and Issues
- ▶ Alloy 600 Issues - Inspection Results and Future Plans
- ▶ Fire Protection Issues
- ▶ Waterford LPSI Issues
- ▶ Power Uprate Implementation Status and Plans
- ▶ Dry Fuel Storage
- ▶ Fuel Performance and Related Issues



## Steam Generator Issues

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- ▶ ANO 1 Degradation Issues and Status
- ▶ Replacement Evaluation and Status
- ▶ Waterford 3 Steam Generator Inspection Results
- ▶ Waterford 3 SG Issues
  - thermal liner inspection
  - non-oxidized Copper



## Alloy 600 Issues

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- ▶ Reactor Vessel Head Nozzle Inspections and Plans
- ▶ Pressurizer Heater Nozzle Repairs - ANO2



## Fire Protection Issues

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- ▶ Appendix R Manual Actions
- ▶ Kaowool
- ▶ Hemyc
- ▶ Hot Shorts



## Waterford LPSI Issues and Status

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- ▶ Discharge Header Nitrogen Voiding
- ▶ Residual Heat Removal Suction Line
- ▶ SI 405 A/B Issues



## Power Uprate Status

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- ▶ ANO 2 Extended Power Uprate
- ▶ Waterford 3 Appendix K Flow Measurement Uncertainty Uprate
- ▶ Waterford 3 Extended Power Uprate
- ▶ Grand Gulf Appendix K and Auxiliary Cooling Tower
- ▶ River Bend Appendix K Flow Measurement Uncertainty Uprate
- ▶ Studies and Future Potential - ANO1, GGNS, RBS



## Dry Fuel Storage

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- ▶ ANO - Current Status and Plans
- ▶ River Bend - Current Status and Plans
- ▶ GGNS - Current Status and Plans



## Fuel Performance and Related Issues

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- ▶ ANO Fuel Performance
- ▶ Waterford 3 Fuel Performance
- ▶ BWR Industry Issues and Noble Metal Chemistry





## Afternoon Session

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## Operations Support Issues

George Williams  
Vice President, Operations Support



## Operations Support Functions

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- ▶ Nuclear Support
- ▶ Security
- ▶ Licensing
- ▶ Materials, Purchasing & Contracts
- ▶ Information Technology
- ▶ Oversight - QA
- ▶ System Outage Management



## Licensing - Quality of LARs

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- ▶ June 2001 NRC/ENS Sr. Management Meeting
  - NRC perception:
    - LAR quality declining (A to B+)
    - Below NRC expectations of Entergy
- ▶ ENS Response
  - Self assessment, July 2001
  - Entergy/NRC workshop, August 2001
  - Quarterly assessments in 2002



## Assessment of LARs- July, 2001

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- ▶ Concluded that LAR quality was generally good, but below ENS expectations
  - Areas for improvement are common to all sites
  - LAR presentation needs to be more clear, concise, and standard
  - More attention needed to administrative details
  - Planning and strategy needs more focus
- ▶ Quality can be affected by complexity & time pressure



## Quality of LARs - Improvements

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- ▶ Created standard template for all ENS LARs adopting new NEI guidance
- ▶ Established a NS&L panel review
- ▶ Created a final checklist and peer review requirement
- ▶ Established LAR identification and submittal milestones for RFOs
- ▶ Created long range schedules
- ▶ Continue with Assessments in 2002
  - 1Q results shows improving trend
  - Still developing quality measures



## Security Highlights

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- ▶ Entergy Nuclear South (EN-S) security performance indicators - all green
- ▶ EN-S has had no security findings
- ▶ EN-S in compliance with Advisories and applicable Information Notice 98-35 requirements



## Security Challenge

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- ▶ Completion of ICMs - August 31, 2002
  - ENS progressing on ICM completion
  - Blast analysis complete
  - Project Management is bidding barriers/gates/cameras
  - Several ICM Issues closed/completed



## Future Security Focus

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- ▶ Inspection of Interim Compensatory Measures post 8-31
- ▶ Interim Compensatory Measures for Dry Cask Storage
- ▶ Changes to the Design Basis Threat
- ▶ Force-on-Force Testing



## Operating Experience

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- ▶ Process Improvements
  - Dedicated organization
  - Comprehensive collection point
  - Fleet wide screening
  - Consistent evaluation process



## Operating Experience

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- ▶ **SOER Matrix**
  - Standard expectation
  - Drive continuous improvement
- ▶ **Work Planning - Bull's Eyes**
  - Targeted to specific work packages
  - Review internal and external databases
- ▶ **Root Cause Analysis - Sharing**



## Afternoon Session

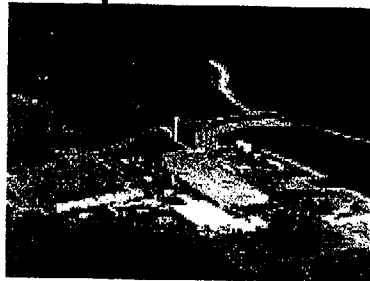
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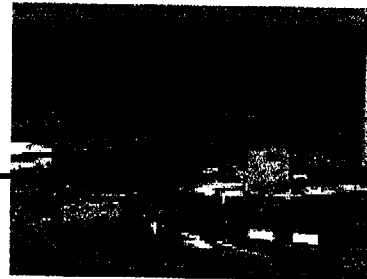


# The Entergy Fleet

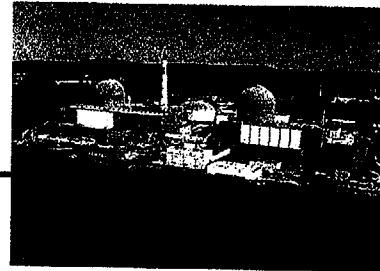
Pilgrim



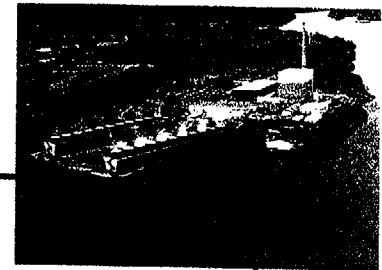
James A. FitzPatrick



Indian Point 2 and 3



Vermont Yankee



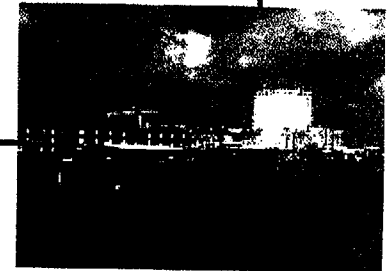
Arkansas Nuclear One



Grand Gulf



River Bend



Waterford 3

## Afternoon Session

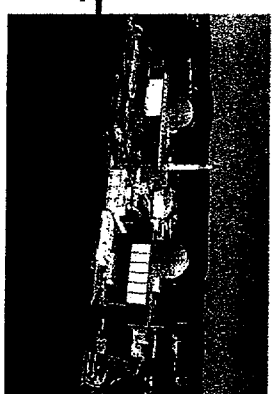
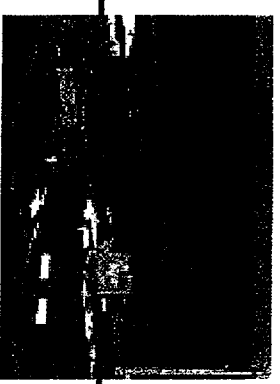
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# GOODBYE!



EOI/NRC Senior Management Meeting

